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ABSTRACT

The goals of the program were to create a meaningful cooperative effort between the Kent County Vocational-Technical School District and the Milford School District and to establish a system to serve as a Statewide model. The first year was devoted to planning; implementation began in 1971. The data collected indicate that results produced were: (1) increased student interest in job preparation, (2) decreased number of dropouts, (3) additional jobs for students in job placement services, (4) favorable response to elementary career education programs from teachers, children, and parents, (5) expanded opportunities for middle and high school students to explore occupations, and (6) increasingly receptive attitude toward career education by staff and faculty. Another result was State funding of a career guidance and placement coordinator for each school district in the State. The project staff worked with ten of the 26 districts by providing information, curriculum materials, and general assistance for career education program planning. Documents developed and disseminated as a result of the project are a bibliography, learning units, program implementation, and data gathering instrumentation. (CE 000 706-9, 737) (MS)

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DELAWARE'S OCCUPATIONAL-VOCATIONAL EDUCATION MODEL

CE 000 710

AN EXPERIMENT IN CAREER EDUCATION

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FINAL REPORT - 1973

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ED 085532

FINAL REPORT

Project No. 0-361-0013
Grant No. OEG-0-71-0678(361)

AN OCCUPATIONAL VOCATIONAL EDUCATION MODEL FOR THE STATE OF DELAWARE

Exemplary Project in Vocational Education
Conducted Under
Part D of Public Law 90-576

Joseph L. English
Delaware State Board for Vocational Education
Project Office
906 Lakeview Avenue
Milford, Delaware 19963

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The project reported herein was performed pursuant to a contract with the Bureau of Adult, Vocational, and Technical Education, Office of Education, U. S. Department of Health, Education and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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I

SUMMARY OF REPORT

Period Covered

October 1, 1970 - September 30, 1973

Goals And Objectives Of The Project

Two specific goals were set for the project:

1. To create a meaningful, cooperative effort between the Kent County Vocational-Technical School District and the Milford School District for the purpose of expanding career education to meet the needs of all children.

2. To establish a system to serve as a model for future expansion of career education in Delaware.

Additionally, five specific objectives are listed.

1. Provisions for broad occupational orientation at the elementary and secondary school levels to increase student awareness concerning the career options open to them in the world of work.

2. Provisions for work experience, cooperative education and similar programs, making possible a wide variety of offerings in many occupational areas.

3. Provisions for students not previously enrolled in vocational programs to receive specific training in job entry skills just prior to the time they leave school.

4. Provisions for intensive occupational guidance and counseling during the last years of school and for initial placement of all students at the completion of their schooling.

5. A commitment from the districts to continue the successful elements of the project after the contract is terminated.

Procedures Followed

The project's planning phase was completed by September 30, 1971 while the implementation phase was partially completed during the second year of program operation. A detailed operational description has been provided in two previous Interim Reports: First Interim Report, ERIC Document No. VT-014-424 (ED-058-420) and Second Interim Report, ERIC Document No. VT-020-156 (ED-075-686).

Although earlier reports contained specific procedural outlines, the following abbreviated procedural design affords readers an overview of operational components: (1) analyze existing situation, (2) design and synthesize career development model, and (3) design simulation and test conceptual model. Ryan (1973) designed "A Conceptual Model of Career Development" with a complement of appropriate systems necessary for the operational implementation of career education. The three subsystems identified above are consistent with his conceptual model and sine qua non for career education systems development.

Results And Accomplishments

School administrators, counselors, teachers and parents con-

tinue to hold favorable attitudes toward the career education concept. Increased support has been noted from area businesses and industrial organizations.

Data indicated that the project has produced the following results: (1) student interest in job preparation has increased, (2) the number of dropouts decreased, (3) job placement services have provided additional jobs for students, (4) elementary career education programs have had a favorable response from teachers and children as well as parents, (5) expanded opportunities for middle and high school students to explore occupations, and (6) staff and faculty have demonstrated an increasingly receptive attitude toward career education.

In another dimension, data indicated that the so-called "college bound" student is taking advantage of job placement services, exploration activities and other opportunities provided by the project.

One interesting result of the project has been state funding of a Career Guidance and Placement Coordinator for each school district in Delaware.

The project staff worked with ten (10) of the twenty-six (26) school districts in Delaware on a cooperative basis by providing information, curriculum materials and general assistance for career education program planning.

Of significant importance is the aggressiveness which

elementary teachers demonstrated toward career education as a total educational concept. It is evident that elementary program development is a critical element in terms of a total systems approach for delivering effective career education. Program success in the elementary school must be attributed to operational designs which considered the psychological needs of elementary teachers as related to the development of innovative career education program designs.

One major accomplishment of the project has been the development and dissemination of five (5) documents designed to assist other professionals with the operational development of K-12 career education programs. These documents are listed below and appended separately to this report:

1). Career Education Resource Bibliography

2). Career Development Learning Units - Elementary School

3). Career Development Learning Units - Middle School

4). The Establishment and Implementation of a K-12 Career Guidance and Job Placement Program

5). Career Development Data Gathering Instrumentation

Evaluation

Evaluation efforts during the project's three-year life were focused in two directions: first, internal product assessment; second, a summative program evaluation conducted by a private subcontractor.

Basically, because it was not possible to structure a controlled situation, results obtained from internal evaluation were based

on criterion-referenced measures designed to assess student achievement.

Commercially available instruments were used as well as those developed by the project staff in order to determine cognitive and affective differences in a selected population that had received career education programming as compared with a similar population that had not participated in career education activities. Implications from these findings have widespread research applications as well as practical significance (Appendix D).

Evaluation data provided by the subcontractor yielded extremely positive results and indicated all project objectives have been met and that project components were effectively used to deliver career education. Elementary career education and career guidance and placement components were noted as being most effective.

In an effort to encapsulate three years of program development, the evaluation subcontractor has prepared a colorful summary document describing program procedures and accomplishments over the grant period. This document will be disseminated with the final report in order to provide readers with a brief but accurate description of the design and development of Delaware's Occupational Vocational Education Model -- "An Experiment in Career Education."

Conclusions And Recommendations

Based on an analysis of data generated from the project over a three-year period from October 1, 1970, to September 30, 1973,

several obvious conclusions can be drawn: first, career education properly implemented has the potential to increase vocational maturity of students; second, student achievement as measured by standardized tests and criterion-referenced measures improved due in part to a general increase in motivation provided by career education; third, community resources are an indispensable component of any educational system and when appropriately used, provide a modern data base for educational content; fourth, in-service training for teachers, administrators and counselors is currently the most appropriate means of implementing career education; fifth, pre-service teacher education in colleges and universities is the area of greatest concern and apparently is offering the greatest deterrent to fully operationalizing career education; sixth, research findings from child development, learning, vocational psychology, sociology, economics and career development must be synthesized into a conceptual paradigm of career education; seventh, placement and career counseling, follow-up and community resource services must be made available to teachers and curriculum planners to serve as input for K-12 career education program development; and ninth, only by reallocating present resources to support new programs and restructure old ones can the true potential of career education be realized.

Within the context of this report, several recommendations are offered for consideration:

1). Educational systems must begin to stress elements of the

affective domain to afford a balanced instructional program;

2). Cognitive and affective objectives must be specified and taught for by teachers;

3). Career development, educational development and self-development must be considered as multidimensional and highly correlated if significant progress is to occur in bringing career education to all children;

4). State and local educational agencies must be reorganized to reflect the philosophical framework through which career education can be delivered; and

5). Teacher education institutions, public and private agencies and parents must be brought to the realization that educational programming geared to the past and present cannot equip young people to cope with the future.

In summary, if man is to survive on this planet, his educational system must become futuristically oriented with curricula developed from a non-static data base and second, because technology has caused a rate of change that is faster than the transmission of our culture from generation to generation, a giant gap has been created between what school provides and the actual needs of youth. In its simplest form, career education is providing new directions for meeting the humanistic educational needs of youth and adults living and working in a time when technological changes are occurring at an ever increasing pace.

To be oblivious to these changes by not absorbing obvious revolutionary concepts into our educational system is inconsistent with Jeffersonian democracy, and indeed, unworthy of the profession.

II

BODY OF REPORT

Review of Literature

Underlying the activities of Delaware's Occupational Vocational Education Model (DOVEM) is the basic philosophy that the individual, as he progresses through twelve years of schooling, should be exposed to a myriad of educational experiences drawn from the world of work so that he forms a realistic picture of today's technological society. Given knowledge of the world of work, the individual should be aware of various employment opportunities and requirements so that he can adequately plan and prepare for a rewarding career. Concomitant with this planning is the development of interest and motivation in work, as well as positive attitudes towards work. Thus, the Model's emphasis is not so much on preparation for a specific occupation, but rather on the individual's gaining knowledge of the world of work as well as knowledge of himself (his interests, values, aptitudes and personality) in order to find a humanly satisfying place in a society where "work", for whatever purpose, is highly individualistic.

The philosophy of the DOVEM project is in accordance with current research in career education. Associate Commissioner of Education, Robert Worthington (1972) indicated that career development is essentially a lifelong process, beginning early in the

preschool years and continuing, for most individuals, through retirement. As a process, it includes the view one has of himself as a worker, the view he has of work itself, the knowledge he acquires about himself and his possible work opportunities, the choices he makes related to himself as a worker and the ways in which he implements those choices. Programs of career development concern themselves with each of these facets of the total process (Worthington, 1972). Another view of career education was expressed by Hoyt (1972). He believed that career education is the total effort of public education and the community aimed at helping all individuals to become familiar with the values of a work-oriented society; to integrate these values into their lives in such a way that work becomes possible, meaningful and satisfying to each individual. Hoyt emphasized the education aspect of career education whereas Evans (1972) emphasized the career aspect. Evans stated that career education should be the total effort of the community to develop a personnally satisfying succession of opportunities for service through work, paid or unpaid, extending throughout life. Career education should neither deny intellectual achievement nor denigrate manual skills. Career education should become part of the student's curriculum from the moment he enters school. It relates the disciplines to varied ways in which one lives and earns a living. As a student progresses through school, the skills, knowledge and above all, attitudes necessary for work success are stressed. Career education

is phased into every subject for every student--not in separate classes for just those who are "going to work." (Hoyt and Evans, 1972).

Current criticism of the educational system has indicated a need to change. Fischer (1972) stated: "We are in the beginning stages of redefinition of the purposes and functions of education in our society" (p. 23). Leonard (1968) maintained that education is ecstatic at its best. He is pleased that schools fail in their present task which is "...to teach a few tricks and otherwise limit possibilities, narrow perceptions and bring the individuals' career as a learner (changer) to an end" (p. 115). Glasser (1969) also feels that present schooling is failure oriented. He proposed his theory of "reality therapy" would promote increased involvement, relevance and thinking at the expense of memory and drill. Schrag (1970) stated: "...the most successful motivating device may simply be the sense that one has chosen what he wants to learn and under what conditions" (p. 94). Goodman (1970) feels that it is ironic to have schools that estrange students when the function of education in advanced countries is to help youngsters find their calling. "The belief that a highly industrialized society requires twelve to twenty years of prior processing of the young is an illusion or a hoax. The evidence is strong that there is no correlation between school performance and life achievement in any of the professions" (Goodman, 1969, p. 98). Toffler (1970) stated that school programs are built around the past rather than what will happen in the future. "To help

avert future shock, we must create a super-industrial education system, and to do this we must search for our objectives and methods in the future rather than in the past" (p. 399).

As a component of public education, career education is the link between abstract learning and the real world of needs and applications. It is apparent that a career education system must draw heavily from research in child development, learning, vocational psychology, etc. From research in these areas, it is obvious that the processes of self and career awareness and decision-making can be generally determined with each developmental stage.

The model presented in Figure 5, "A Theoretical Futuristic Instructional Model" is based on child development theory proposed by Harvey, Hunt and Schroder (1961). The basic model is supplemented by the work of Erikson (1950); Piaget (1932); Piaget and Inhelder (1969); and Ginzberg (et al., 1951).

The model presented by Harvey, Hunt and Schroder (1961) proposes "four basic stages of development which recycle more than once, and given sufficiently unfavorable conditions, terminate in arrestation at one of the four stages" (Tuckman, no date, p. 9). In the first stage a child does not differentiate between himself and his environment and others in it, whereas, in the second stage he strongly differentiates self from other but fails to relate the two sets of concepts. As he progresses to the third stage, a child empirically matches self and other concepts, while in the fourth and final stage

he generates superordinate concepts to relate self and others. The primary concern of the first two stages is dependency while the last two stages consist mainly of interdependency. Tuckman has postulated that a confrontation of new and unfamiliar experiences results in a recycling of the stages. A total recycle is dependent upon the environment in which the child functions. "If this environment is open and supportive, total recycling will occur. If the environment is restrictive in a particular way, development will become arrested and only partial recycling will occur" (Tuckman, p. 10). A detailed analysis of this theory is presented in Figure 5, "A Theoretical Futuristic Learning Model."

Gagné (1972) suggested that the insurance of better learning is dependent upon the prior learning or prerequisite capabilities. He perceived the implications of learning processing as being a matter of stimulating the learner to make use of the capabilities that are already at his disposal.

Piaget (1954) regarded learning as a function of development. His theory implied that development of cognition rather than development of cognitive processes in individuals is most important. His theory of development may be divided into three phases: (1) the sensorimotor, pre-language stage, from birth to approximately age two; (2) preoperational thought in which one's direct perceptions are invariable and move toward conservation of numbers and amounts, from two to eleven years old; (3) the final stage begins at eleven

or twelve years and takes the child to mature thinking. Piaget feels that these stages are rather independent of experience or individual differences.

The philosphy of DOVEM is based on theoretical rationale provided by recent research in vocational development theory. Super and others (1957, 1963, 1967) have investigated the exploratory and decision-making processes in vocational behavior in relation to trial and tentative choice before final vocational choice is made. Their approach is an integrative one which stresses the interactive nature of personal and environmental variables in the process of vocational development. Super has characterized the career process as ongoing, continuous and generally irreversible; as a process of compromise and synthesis within which one's primary construct, the development and implementation of the self-concept, operates. The basic notion is that an individual chooses occupations whose characteristics will allow him to function in a role that is consistent with his self-concept and that the latter conception is a function of his developmental history. Super and Bachrach (1957) placed heavy emphasis upon the developmental nature of work-related decision-making and used a developmental framework of life stages to describe various phases in the selection of an occupation. Cultural, social, trait and psychodynamic factors were identified as influencing the choice process from childhood to late adulthood. The individual is conceived of as moving along one of a number of possible pathways through the

educational system into and through the work system (Super, 1969).

Tiedeman and O'Hara (1963) investigated the process of gaining a vocational identity and determined the correlates of the cognitive mechanisms of differentiation and integration set in motion through recognition of a problem or present unsatisfactory situation. They further suggested that an individual's personality is shaped by perceptions of career choices and to some degree by the individual's conformance to the norms and values of those individuals already established within the vocational setting. Field, Kehas and Tiedeman (1963) suggested that the implementation of self in vocational development is a continuous process. They also suggested that at a given point in development "...individuals choose actions which fit their current notion of: (1) what they are like; (2) what they can be like; (3) what they want to be like; (4) what their situation is like; (5) what their situation might be like; (6) the way they see these aspects of self and situation as being related" (p. 768).

O'Hara (1968) viewed career development as a learning process. He reasons that changes in vocational behavior are the result of cognitive changes. The essence of his theory is that the career development of students can be facilitated by involving them in various learning situations which have occupational implications. Herr (1970) suggested that vocational development subsumes a series of decisions, many with direct connection to vocational content and

others less directly connected but no less important. "Decision-making includes the identifying and the defining of one's values; what they are and what they are not, where they appear and where they do not appear. Decisions, then, are not isolated from one's self-concept" (Herr, 1970, p. 7).

Based on theoretical formulations of developmental stages in vocational behavior, DOVEM has sought to provide a multi-level curriculum designed for students to investigate the world of work. The program was designed to coincide with and provide for the sequential aspects of career development beginning with the lowest levels of vocational maturity.

Of particular importance are activities designed by the Project staff which focus on individual personality development and associated trait factors. Research generated by Holland's (1966) model for vocational choice tends to verify that the six category typology of psychosocial environments and personality play an important role in vocational choice behavior. Korman (1970) found that low self-esteem persons are less likely than high self-esteem persons to choose occupations which are potentially satisfying. Stevens (1973) found that there is a significant relationship between an individual's personality characteristics and his pattern of job seeking. Since personality development and career development seem to be intimately tied together, some theorists view career development as a continuing attempt to implement one's self-concept or to

express one's personality. Galinsky and Fast (1966) stated that "in our society one of the most clear-cut avenues through which identity concerns are expressed is the process of making a vocational choice." Borow (1961) viewed human development and the quest for maturity through a vocational prism. Lamm (1972, p. 127) feels that "knowledge is a means in the process of individuation."

As the student progresses through school, one component of the introduction to the world of work is the meaning of work to the individual in both its sociological and psychological aspects. Lodahl and Kejner (1965) investigated job involvement as a function of a multidimensional scalable attitude affected by social-organizational conditions and learned value orientations. Various other studies (Friedlander, 1963) have identified social and technical environment, intrinsic self-actualizing work aspects and recognition through advancement as essential elements of job satisfaction. Other important aspects found related to satisfaction were freedom and intellectual stimulation (Geist, 1963). Activities designed by DOVEM emphasized those aspects of work and job satisfaction as the child moves through the developmental phases of vocational exploration toward a tentative career choice.

On the basis of research relating personality, attitude and interest to occupational choice, status and performance (Super and Crites, 1962), DOVEM's project staff attempted to incorporate more vocational guidance and counseling into ongoing guidance programs

for students currently enrolled in secondary programs. A career guidance and placement coordinator provided occupational information for secondary students planning job entry at the end of their high school education as well as for those who were preparing for post-secondary education. Ginzberg (1971) defined career guidance as "a process of structured intervention aimed at helping individuals to take advantage of the educational, training and occupational opportunities that are available." Crites (1969) recommended that the counselor should develop explicit criteria of realistic vocational choice which can be used in individual diagnosis. He showed how these explicit criteria might be developed with aptitude and interest test data. DOVEM's central concern was helping the individual to see himself as having choices related to personal characteristics which can be used to evaluate and order the choices available (Herr, 1972). Parnell (1972) explained that through the career-cluster program the present counseling and guidance emphasis on academic ability is being replaced with emphasis on "real-life" goals. Bottoms and O'Kelley (1971) indicated that the guidance program should be designed to help students personalize the meaning of their vocational experience at each educational level and to assist them at key decision-making points. Budke (1971) defined occupational exploration as organized educational efforts directed at exposing students to a wide spectrum of career occupations through discussion, films, resource persons and field trips as well as exploration of their

interests and abilities through participation in manipulative skills and simulations in a laboratory or work setting."

In summary, the basic career development point of view held by the project staff is one which stresses the importance of the self-concept. With this emphasis, career development is viewed as a dynamic process in which self-conception integrates personality and need structures into the developmental process. Herr's (1969) ken of this model emphasized the importance of a progressive synthesis in role clarification and in choice options. Furthermore, Herr's interpretation of this model indicated that the individual

> ...learns through experience and by socialization what kind of person he is, that of which he is capable, what he values, his strengths and weaknesses, and the kinds of outlets which will be compatible with the pictures he has of himself. (It)...provides for change in individual behavior, change in environmental expectations and change in the interaction between the individual and the environment.

Nearly 2.5 million students leave the formal education system in the United States each year without adequate preparation for a career. To put a career education program into action requires a profound rethinking of missions and a restructuring of operations by all who are concerned with American education. The task will

require financial commitment, but the benefits gained will be worth the investment (Office of Education, 1971).

Goals And Objectives Of The Project

Two specific goals have been set for the project:

1. To create a meaningful, cooperative effort between the Kent County Vocational Technical School District and the Milford School District for the purpose of expanding vocational education to meet the needs of all children.

2. To establish a system to serve as a model for future expansion of vocational education in Delaware.

Additionally, five specific objectives are listed:

1. Provisions for broad occupational orientation at the elementary and secondary school levels to increase student awareness concerning the career options open to them in the world of work.

2. Provisions for work experience, cooperative education and similar programs, making possible a wide variety of offerings in many occupational areas.

3. Provisions for students not previously enrolled in vocational programs to receive specific training in job entry skills just prior to the time they leave school.

4. Provisions for intensive occupational guidance and counseling during the last years of school and for initial placement of all students at the completion of their schooling.

5. A commitment from the districts to continue the successful elements of the project after the contract is terminated.

Description of Population

Table 1 categorizes the organizational nature of the Milford School District by number of students, teachers, administrators, counselors and aides.

Table 2 shows the distribution of student population by race. With a thirty (30) percent Negro population integrated into the total student enrollment (N=4,172), it is apparent that findings generated must not be generalized beyond a similar population.

TABLE 1

Distribution of Students, Teachers, Counselors, Aides and Administrators by Organizational Unit

Organizational Unit	Student Pop.	Teacher	Counselor	Aide	Admin.
K-4	1,608	66	0	28	3
5-8	1,312	56	2	1	3
9-12	1,252	101	4	0	4
TOTAL	4,172	183	6	29	10

TABLE 2

Pupil Distribution by Race

Race	Percentage	Number
White	69	2,892
Negro	30	1,238
Other	01	42
TOTAL	100	4,172

Figures 1 and 2 describe the fourth (4th) and eighth (8th) grade populations respectively in the Milford School District.

The ability distribution of 4th and 8th grade Milford populations appears to be positively skewed when compared to state norms. It is apparent that Milford students at these grade levels score lower than similar populations in the state.

Theoretical Design

A humanistic conceptual paradigm was designed to provide staff personnel with an operational process framework necessary for programmatic development. Figure 3 represents a modified version of Ryan's conceptual model of career development (1973) and is included to provide a focal point for program development.

Figure 4 represents a theoretical framework for comprehensive career education and characterizes the cyclic nature of the educative process. It is obvious from Figure 4 that school systems must be

FIGURE 1

I. Test Results - Milford and Statewide Grade 4 Ability Tests

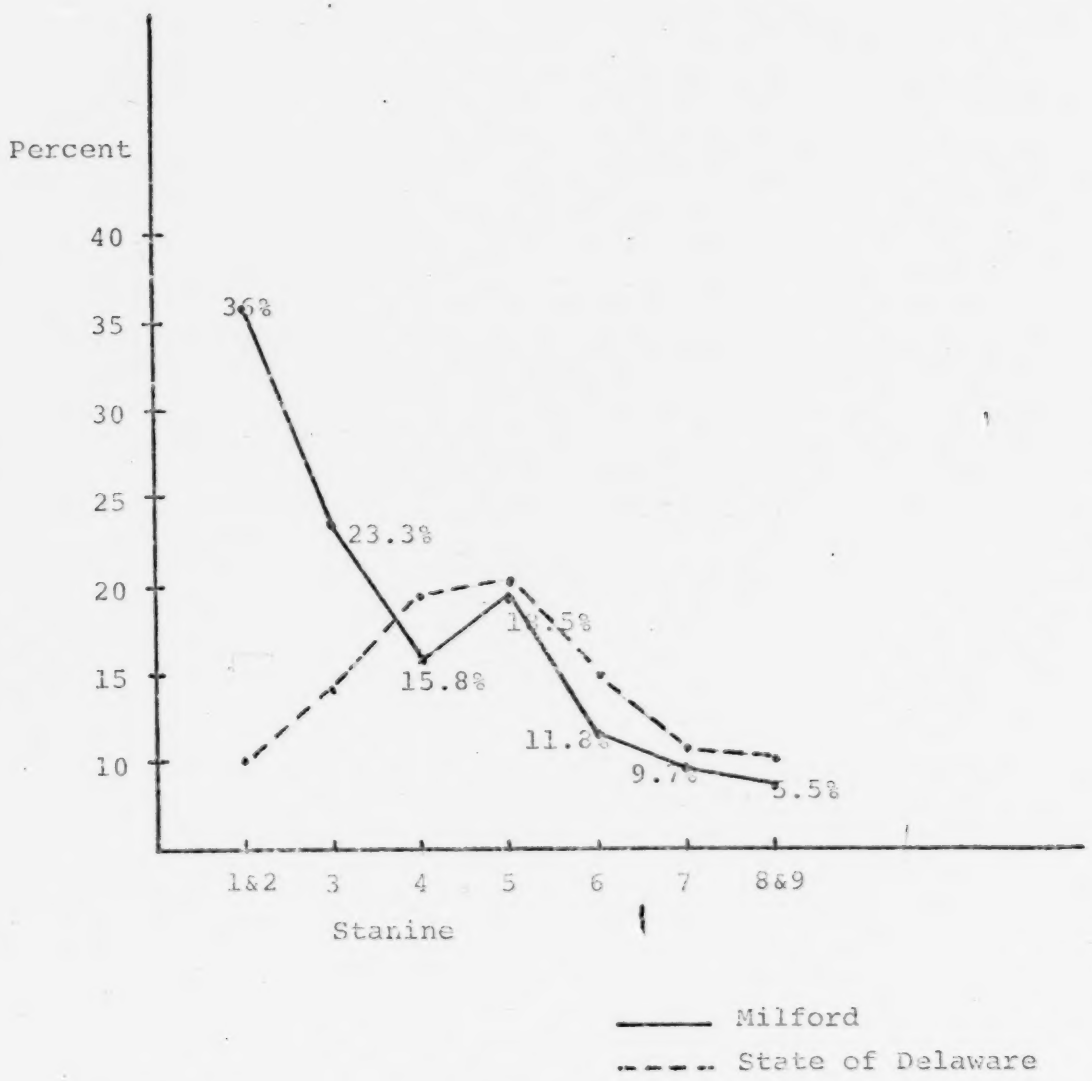


FIGURE 2

II. Test Results -- Milford and Statewide Grade 8 Ability Tests

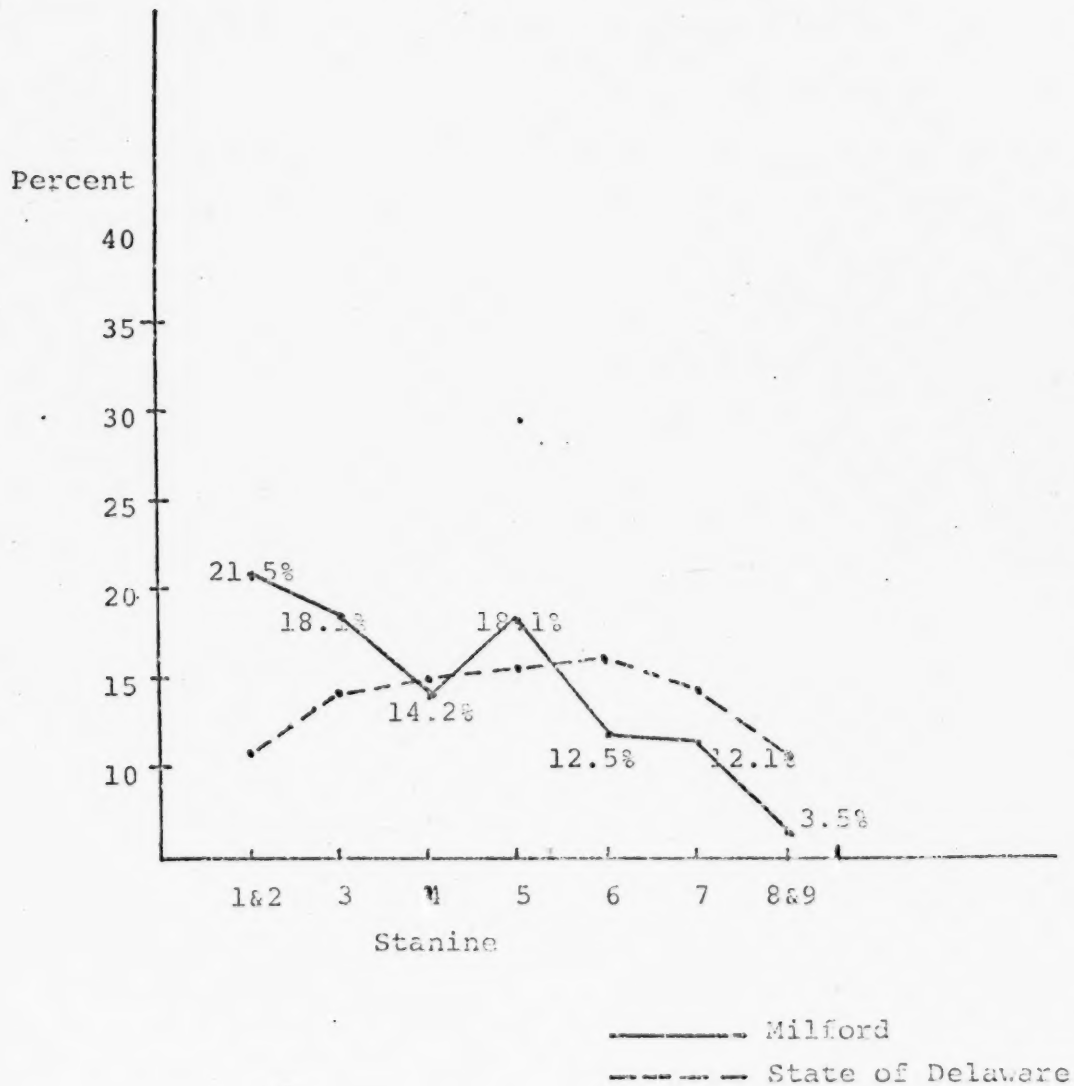
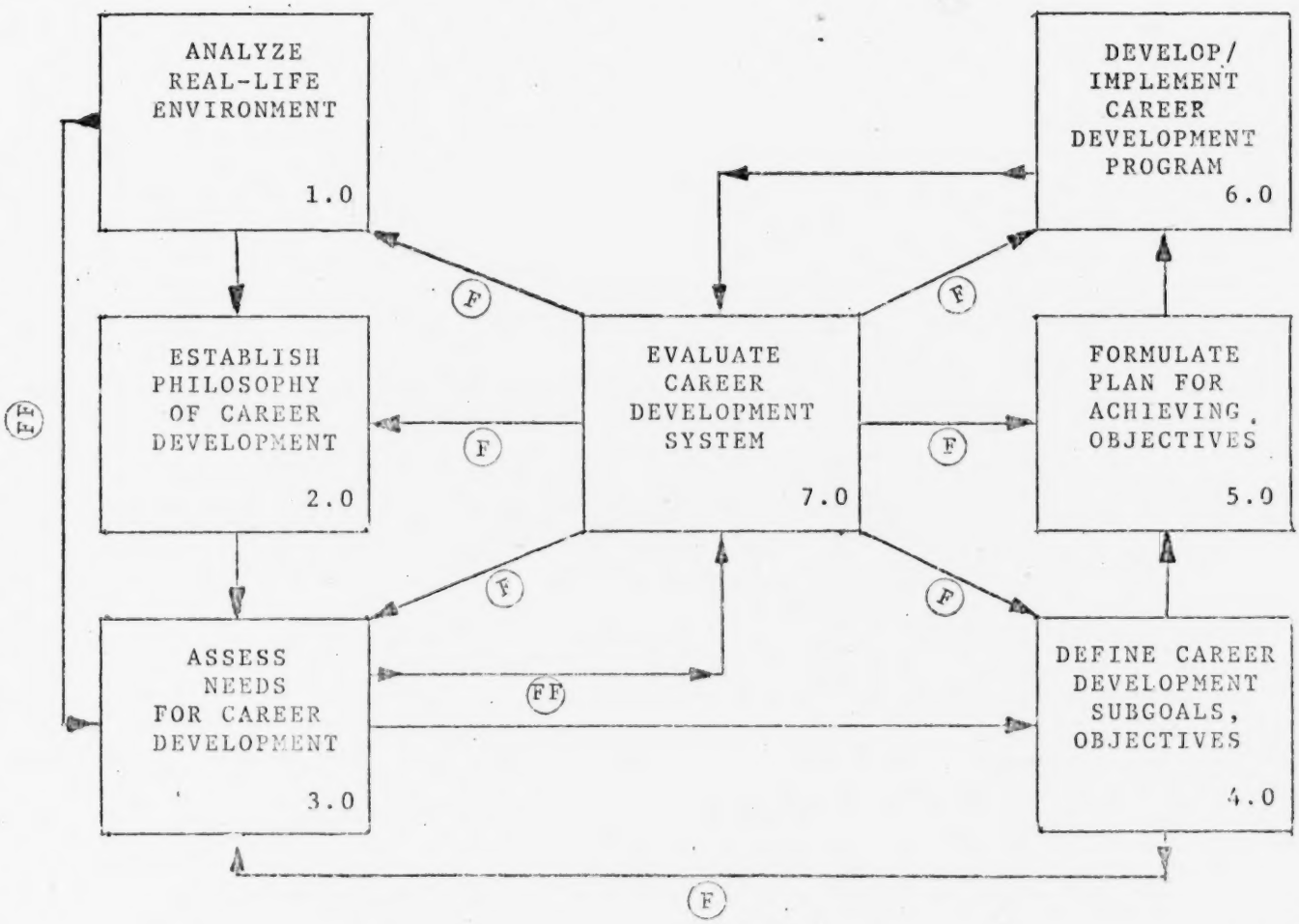


FIGURE 3

A CONCEPTUAL PARADIGM FOR CAREER EDUCATION

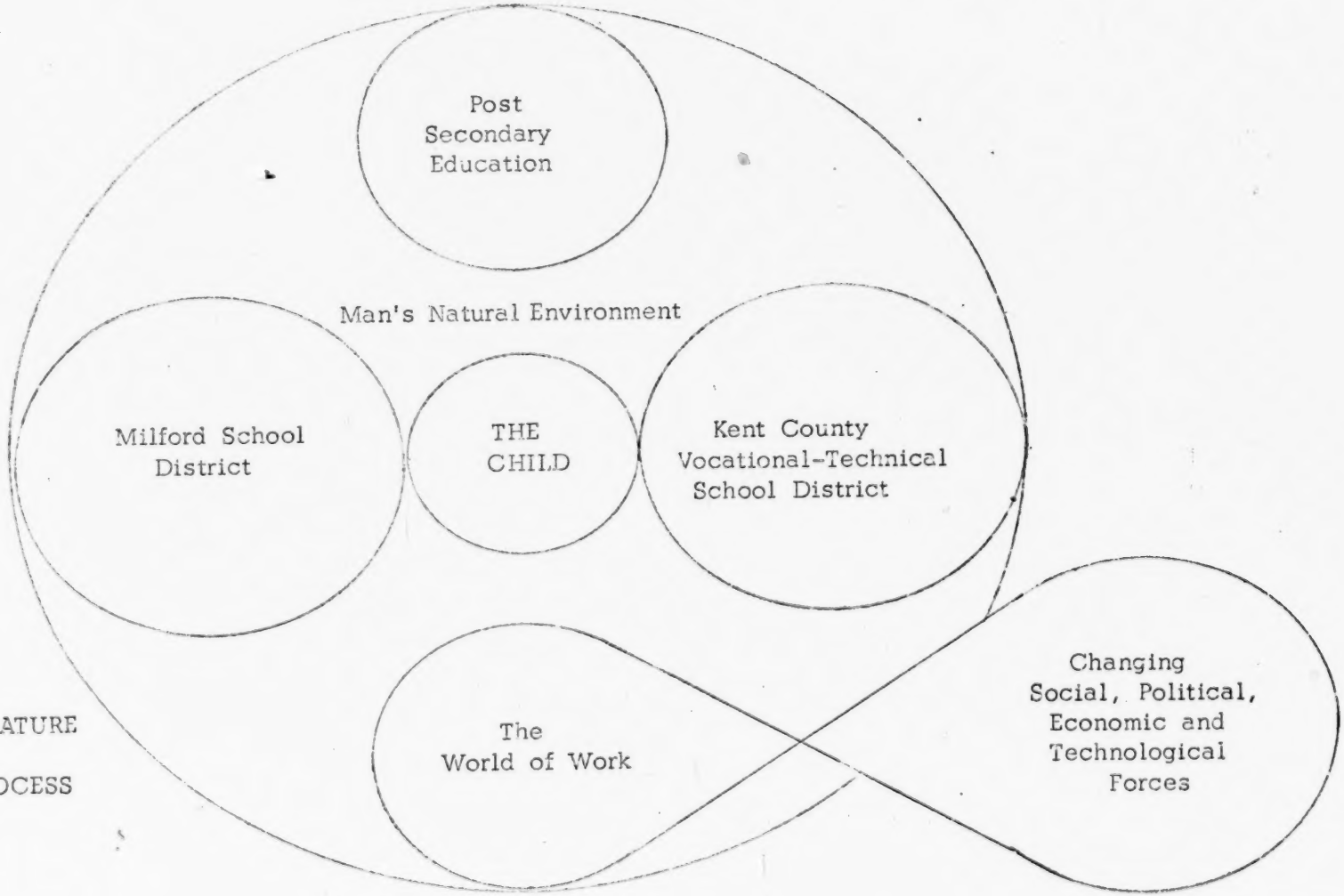


Adapted from T. Antoinette Ryan's article, "A Conceptual Model of Career Development", Educational Technology, June, 1973, p. 28.

FIGURE 4

A THEORETICAL FRAMEWORK FOR COMPREHENSIVE

CAREER EDUCATION



THE CYCLIC NATURE
OF THE
EDUCATIVE PROCESS

responsive to environmental influence generated by expanding external socio-economic factors.

After careful analysis of research data, it was concluded that a career education delivery system could not be designed in a vacuum and that a multidimensional instructional mode was necessary. Figure 5 represents the theoretical instructional model used to design DOVEM's career education delivery system.

In order to orchestrate the career education delivery system, it was necessary to identify subsystems and component parts in reference to real or simulated situations, i.e., existing systems were modified to test and evaluate the appropriateness and effectiveness of designs used to deliver career education. Figure 6 graphically illustrates education subsystems within career education that were used to test and define K-12 components. It is apparent from Figure 6 that individual success and fulfillment is highly individualistic; therefore, a myriad of routes are available to each individual.

Within the context of K-12 programming, it was necessary to design a system that would incorporate the various career education components. Figure 7 represents a triad model for the development of career education learning units. It is apparent from Figure 7 that typical school subjects are not taught in a vacuum, i.e., concepts are derived from each subject area and operationalized by application to a community activity derived from several occupational

FIGURE 5
A THEORETICAL FUTURISTIC INSTRUCTIONAL MODEL

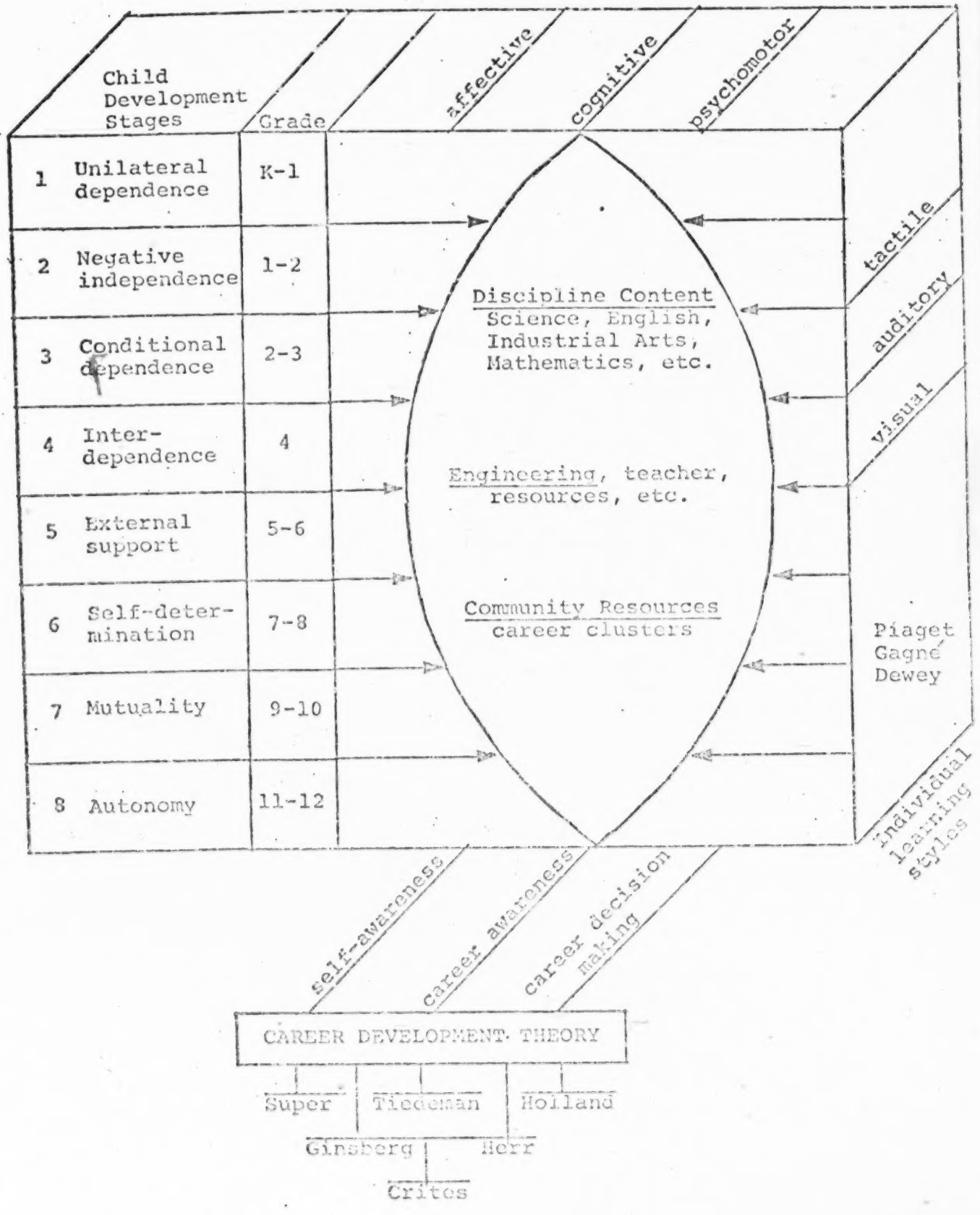


FIGURE 6

CAREER EDUCATION SYSTEM

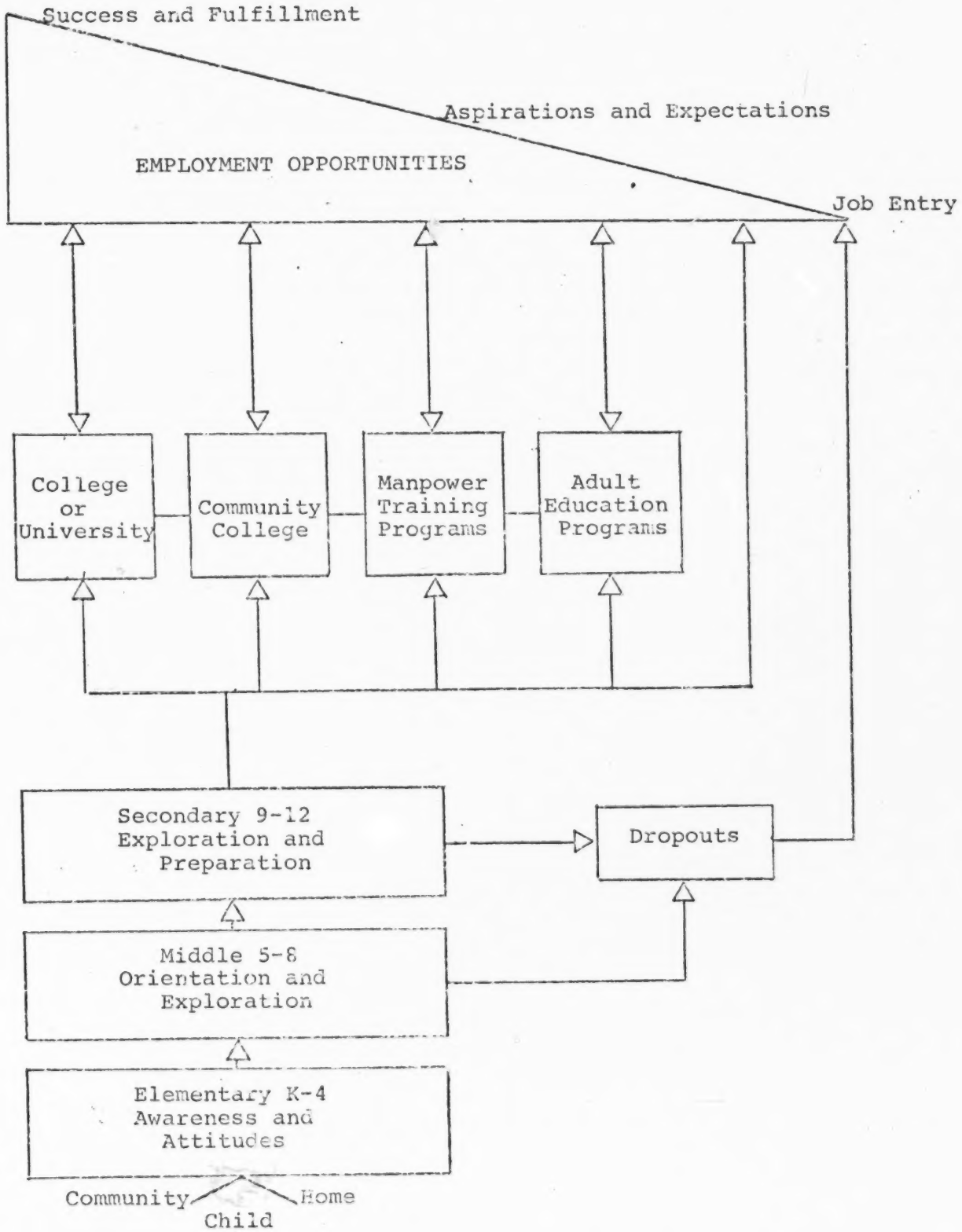
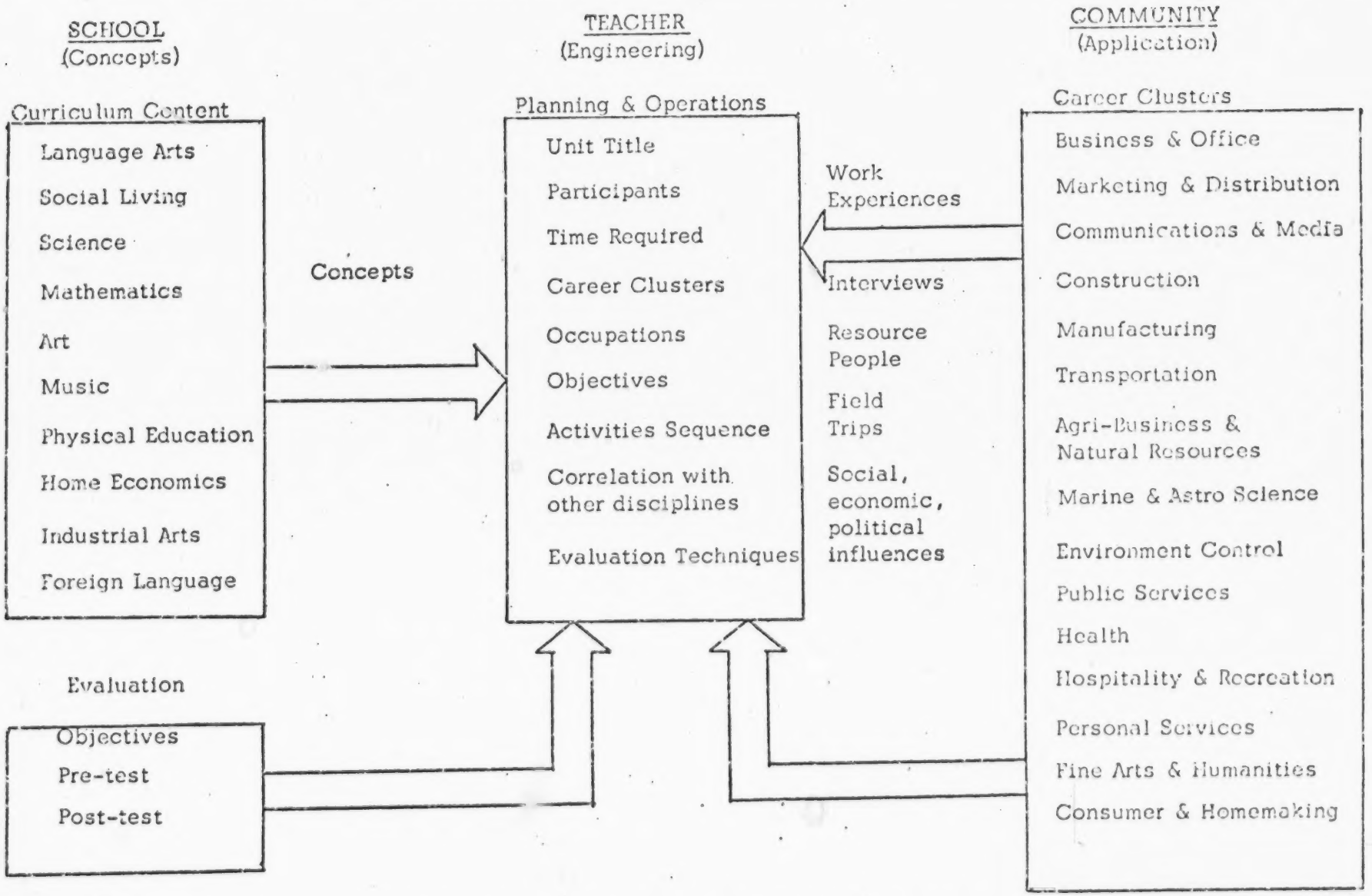


FIGURE 7

A TRIAD MODEL FOR DEVELOPMENT OF CAREER EDUCATION LEARNING UNIT



clusters. It must be pointed out that Figure 7 is conceptually derived from the instructural model illustrated by Figure 5.

Comprehensive Career Education Programming

In terms of comprehensive program development, an example is included and represents an extremely small sample of program output generated by application of designs previously described in this report.

The following figures and corresponding grade levels are included as a sample and are not to be considered as a complete program: Figure 8, grade K-4; Figure 9, grades 5-8; Figure 10, grades 9-10; and Figure 11, grades 11-12.

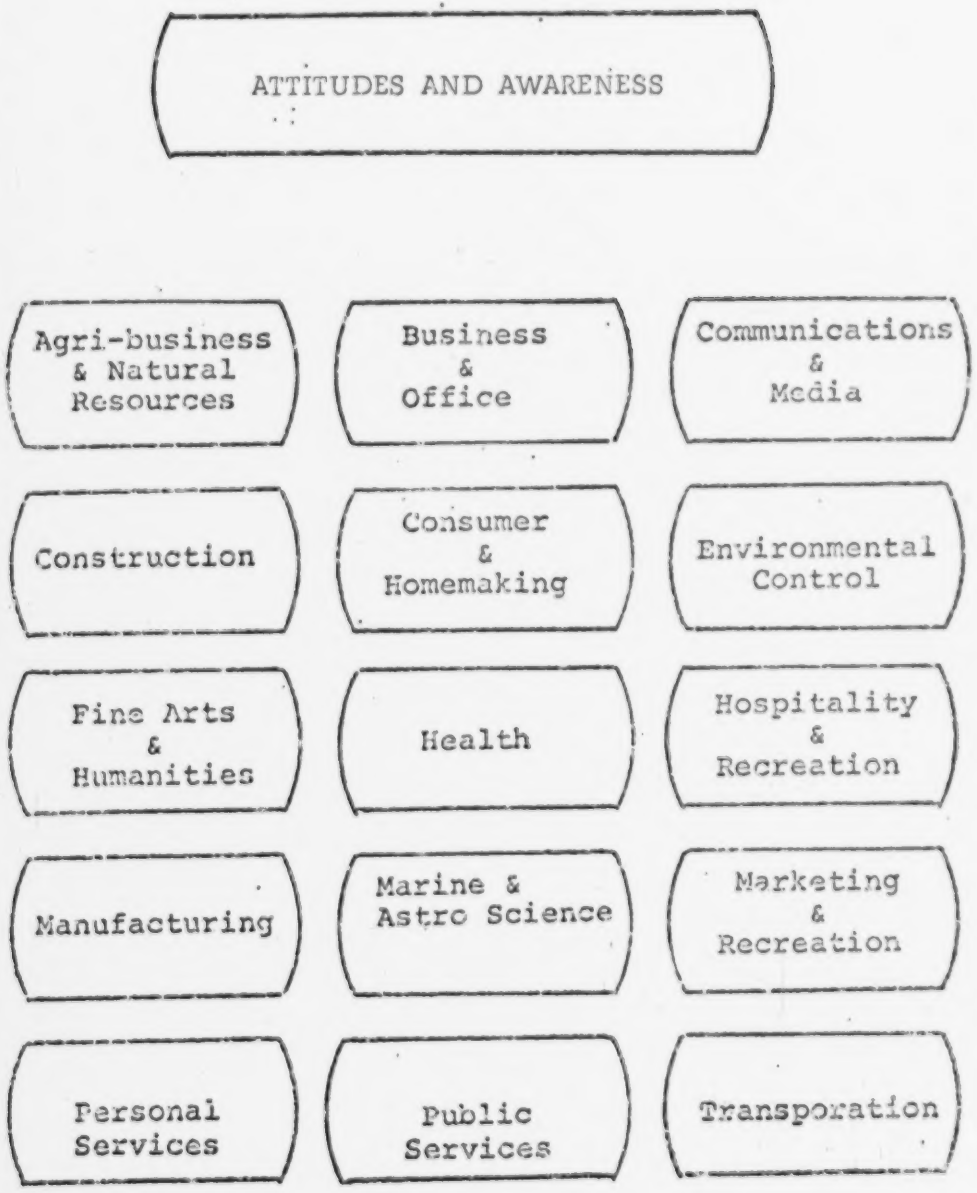
Evidence indicated that the school-based model was not effective for many students in grades 11 and 12. Therefore, a community based effort was developed to complement the school-based career education system. Figure 12 illustrates the "community classroom" concept as it relates to program development at the secondary level.

Operational Design

Figure 13 schematically describes the procedural design used for the implementation of Delaware's Occupational Vocational Education Model. Note that the change strategy input is directly related to research and development, i.e., change strategies designed to solve specific problems are derived from educational research and experimentation.

FIGURE 8

KINDERGARTEN TO GRADE 4



COMPREHENSIVE EDUCATION PROGRAM

Emphasis is placed upon development of A[illegible] TOWARD THE WORLD OF WORK without changing the existing curriculum. Projects to develop in ALL children a respect for ALL work and a motivation for productive citizenship in the world of work.

This program does not call for additional curriculum, since elementary teachers are presently overloaded with subjects. It is merely a new emphasis in the existing curriculum to develop positive attitudes about the world of work as an enrichment program.

Examples:

(Social Studies) George Washington was not only President of the United States, but a surveyor, farmer, soldier and statesman. He held many jobs which made up his career.

(Language Arts) Instead of instructing students to prepare a list of common nouns, they are asked to list as many occupations in the community as they can think of under common nouns.

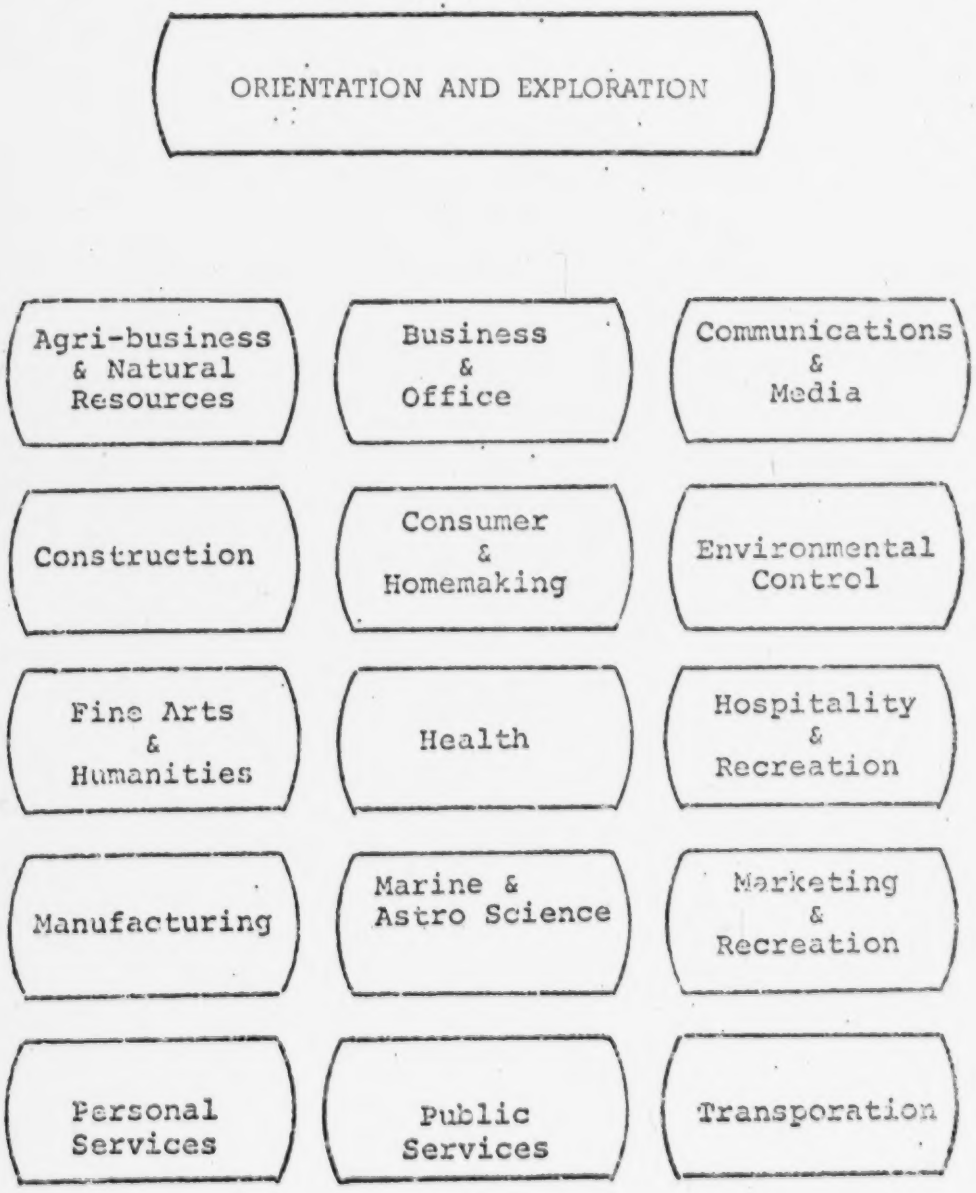
(Reading) Themes such as "What I Want To Be" and "Come Work With Us" are emphasized.

(Industrial Arts) Concrete manipulative experience using tools and materials serve as powerful motivation techniques for skill development in reading and mathematics.

(Music) America's folk music is a recorded history of man's attempt to shape a new world.

FIGURE 9

GRADES 5, 6, 7, 8



GRADES 5 & 6

Occupational clusters form the basis of a program designed to expose middle school students to many of life's experiences. School is no longer unrelated to real life. An integrated multi-disciplined operation will include all subject areas and will be used in order to implement the middle school concept. With team teaching, teachers plan and work together to bring their combined talents to benefit our children.

A Career Development Laboratory provides students with materials, space and assistance to actively investigate the career clusters. The teaching team is assisted by the laboratory aide in planning and executing activities designed to associate school subjects with career possibilities.

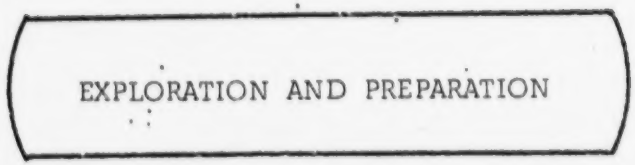
GRADES 7 & 8

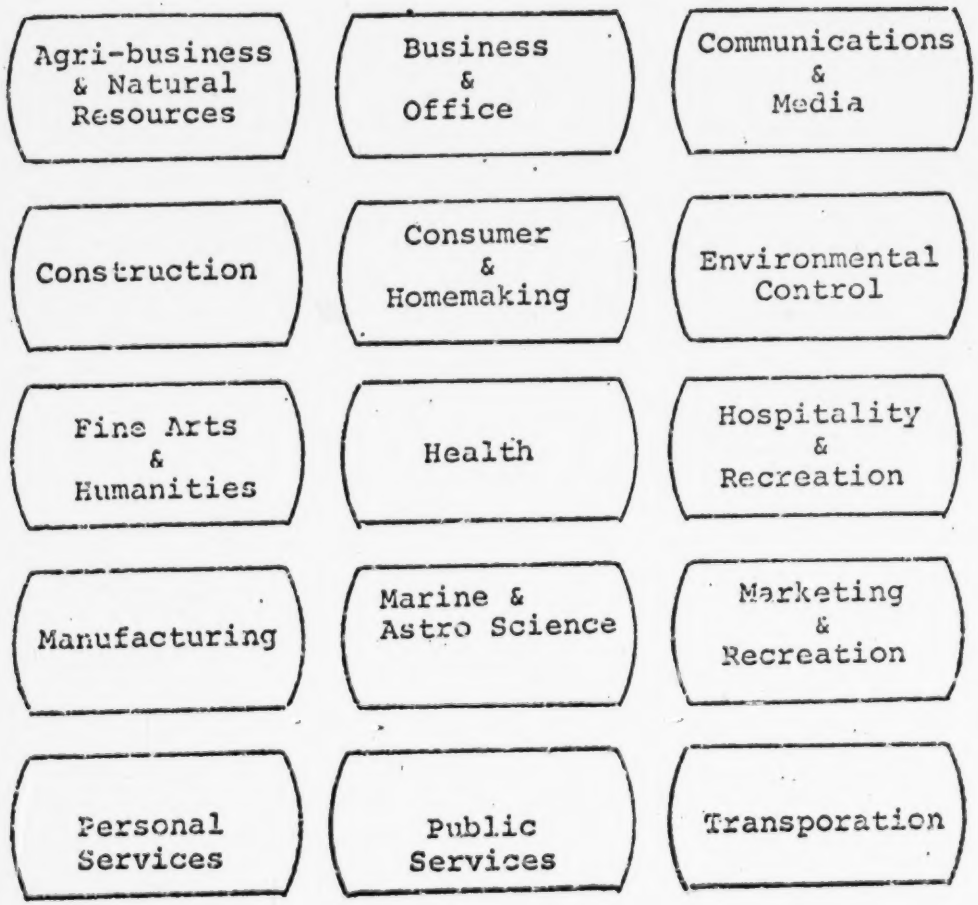
The practical arts and elective programs emphasize career exploration and the relationship of man to his technological environment. Industrial arts instruction includes units on construction and manufacturing. Home economics classes investigate child development and consumer economics in addition to foods and clothing.

A program of more than 40 electives--everything from folk singing to cake decorating, chess to bicycle riding--provide a variety of experiences which make school, and therefore learning, relevant. Elective courses are operating in the clusters of business and office, communications and media, construction, marketing and distribution, and health. Students are urged to explore the clusters and learn of the many job opportunities. The community is used as a resource to make learning real.

FIGURE 10

GRADES 9 and 10





A broad CAREER EXPLORATION PROGRAM is established leading toward the goal of making a tentative occupational choice by age sixteen.

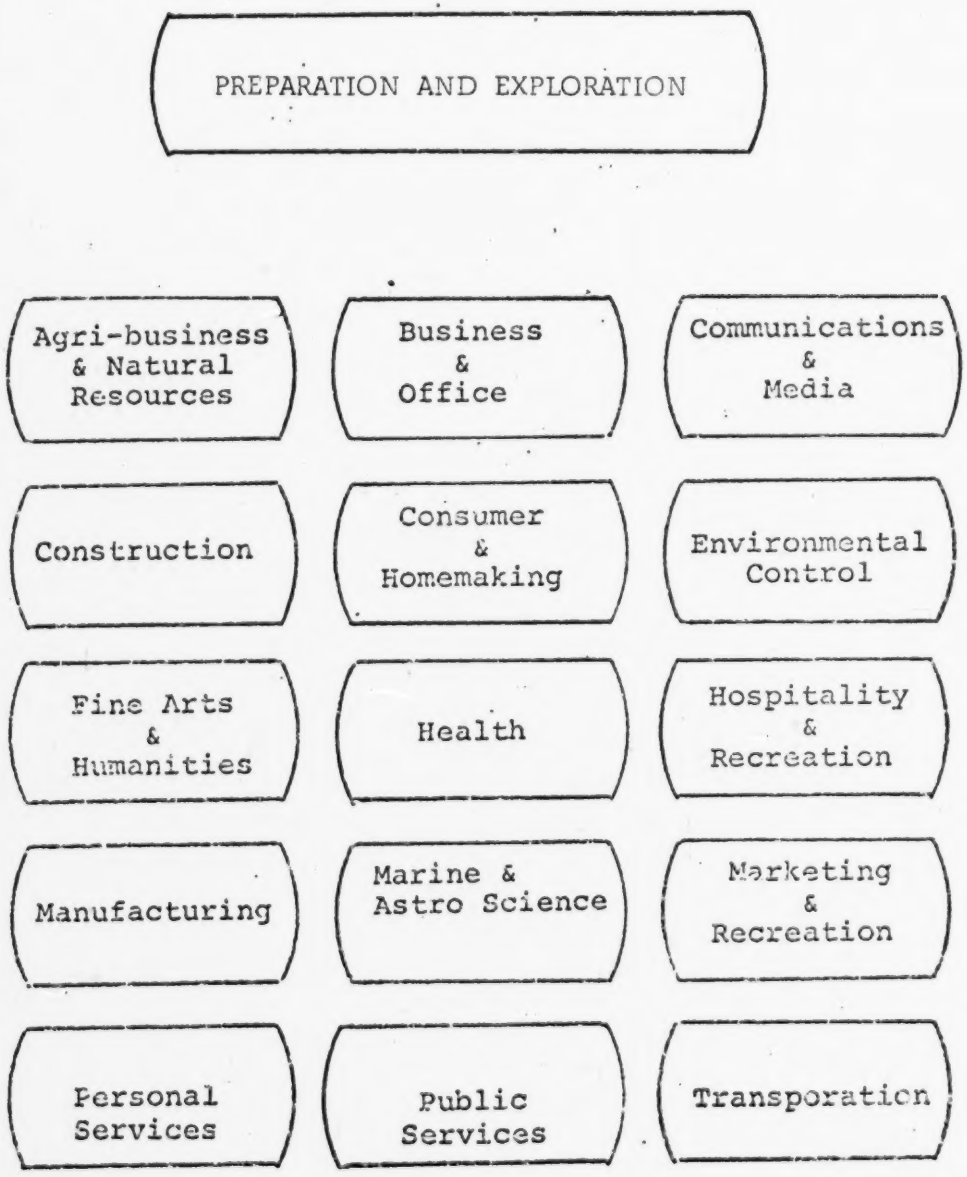
The integrated multi-disciplined approach includes all subject areas and is used to make learning realistic. Language, mathematics, science and social studies teachers combine their talents to provide the student with a total experience rather than separate fragments.

Practical arts classes are established in industry, business, marketing, agriculture, etc. Industrial arts, agriculture, business and home economics are current examples to be expanded and revamped.

Students are provided with the opportunity to explore various occupational clusters. They can receive consumer education, home-making, plastics, wood, metals, power mechanics, office machines, etc. This is done prior to skill training in a particular cluster.

FIGURE 11

GRADES 11 and 12



The Community-Based Career Education Model is used for the eleventh and twelfth grade exploration and preparation program. The use of the community as an educational resource is greatly expanded. All students should have the opportunities to use the community for career exploration after they have made a tentative occupational choice.

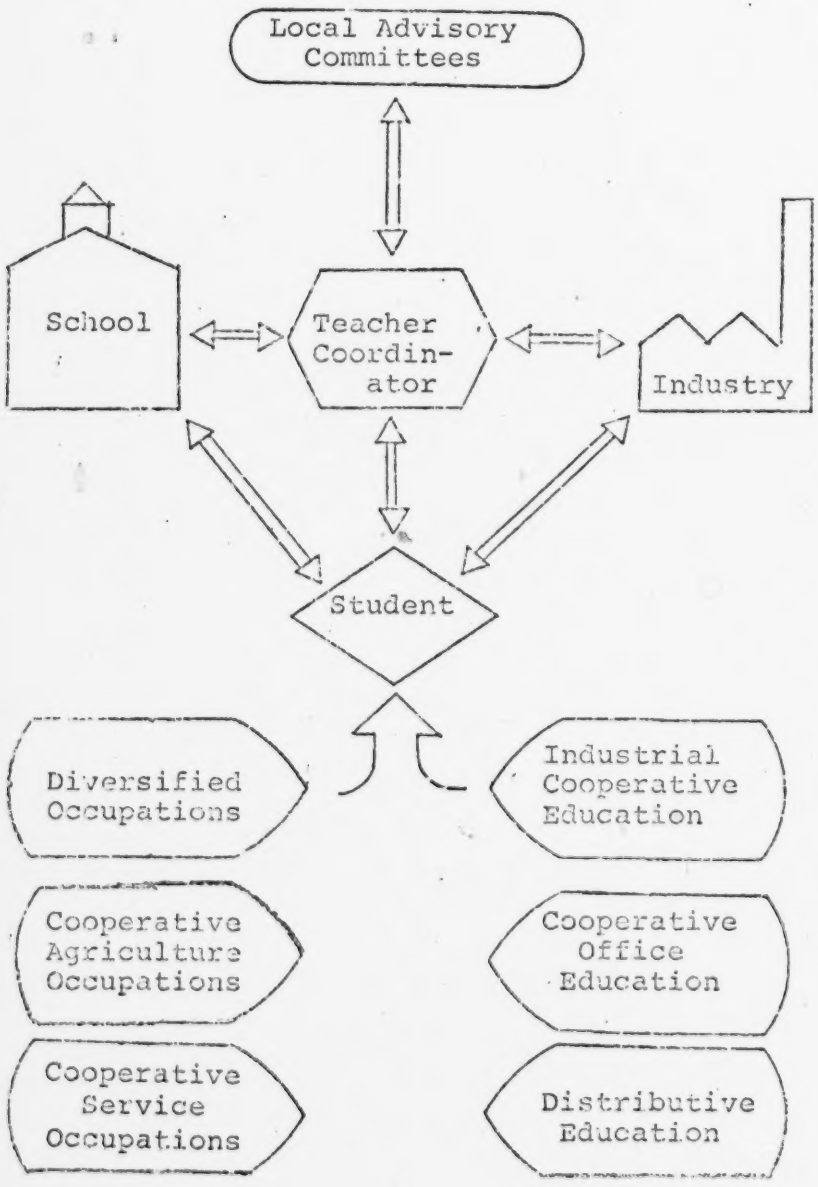
It is not always possible to build elaborate and expensive occupational training facilities; therefore, we encourage the development of cooperative education programs. These are programs in which the school and a business or industry cooperate in educating a student for a career in that business or industry. Under the guidance of a qualified teacher-coordinator, students attend classes for part of the day and receive on-the-job training under actual working conditions out in the community for the other part.

Existing occupational classes will be expanded and supported.

We must draw upon basic skill subjects such as language arts and mathematics and insure they are related to career possibilities.

FIGURE 12

COMMUNITY CLASSROOM CONCEPT



Cooperative programs are part of the public school or community college system. They provide practical on-the-job experience. They involve the community as partners in the educational enterprise. Examples:

Industrial Cooperative Education (ICE) trades such as auto mechanics, electronics, printing;

Distributive Education (DE) sales, advertising, marketing, merchandising, management;

Cooperative Office Education (COE) business and secretarial skills such as data processing, general clerical work or secretarial training;

Cooperative Agriculture Occupations--included in this program are production, processing, distribution and services;

Cooperative Service Occupations--included in this are child care, food and nutrition, housekeeping, clothing;

Diversified Occupations (DO)--several of the above-named occupations may be included in this program. An individual student receives training in only one.

Journalism--students work cooperatively with the local newspaper and radio station.

Science--included are cooperative work stations in chemical laboratories, hospitals, manufacturing plants and research firms. Students have the opportunity to work with professionals and technicians in various scientific specialities.

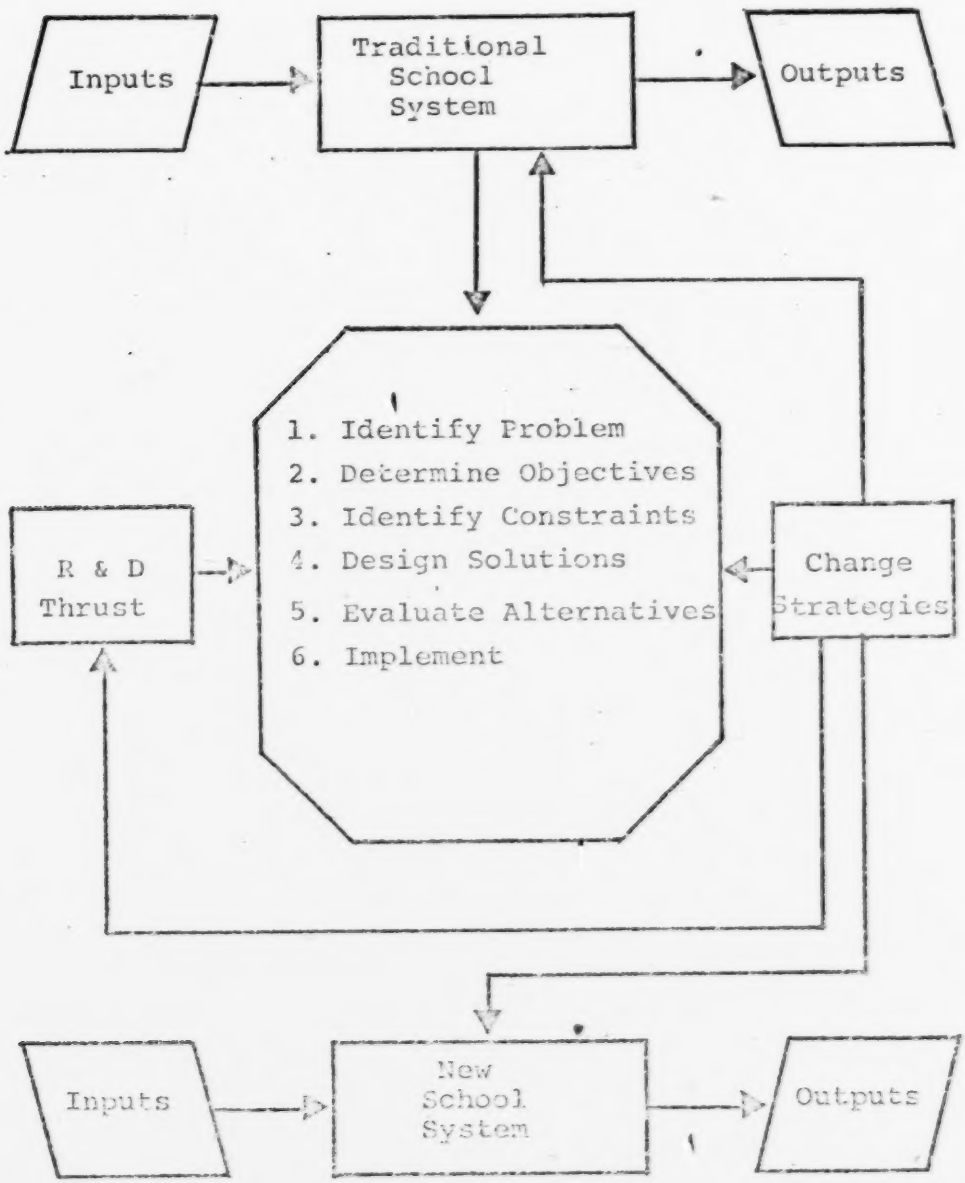
Manufacturing--includes experiences in all phases of manufacturing operations. An individual student receives training in one of three manufacturing technologies: management, production, personnel.

Government--work experience in various departments of local and state government. Included are police, health, sanitation and environmental control.

FIGURE 13

DELAWARE'S OCCUPATIONAL-VOCATIONAL EDUCATION MODEL

A PROCEDURAL DESIGN



Adapted from David Bushnell's article, "A Systematic Strategy for School Renewal", Educational Technology, February, 1972, p. 30.

By superimposing a tri-level (K-4, 5-8, 9-12) structure over the procedural design, it was possible to develop program strategies for each specific project objective.

Figures 14, 15, 16, 17 and 18 are included to illustrate a variety of programs developed through the application of systems analysis to educational program development.

Procedures

A systematic approach was used to work toward accomplishing the curriculum goals and objectives. The following steps were used for planning:

1. Identify and organize appropriate individuals and groups.
2. Promote understanding of the career concept among key people.
3. Study educational system to determine the changes necessary to move it toward a career education system.
4. Inventory all existing resources.
5. Design career education system for local school system.
6. Gain cooperation of all necessary organizations and individuals.
7. Implement the system.
8. Determine how well the system is working.
9. Set up a feedback method to use evaluation findings to improve system.

FIGURE 14

OBJECTIVE: Provisions for broad occupational orientation at the elementary and secondary levels to increase student awareness of the range of options open to them in the world of work.

PROGRAMS - ACTIVITIES:

ELEMENTARY LEVEL (K-4)

OCCUPATIONAL ATTITUDES PROGRAM
Career Development Learning Units
Interviewing and Testing Programs

MIDDLE SCHOOL LEVEL (5-8)

CAREER ORIENTATION PROGRAM
Career Development Laboratory, 5-6
Television Studio, 5-6
Home Economics Expansion, 5-8
Industrial Arts Expansion, 5-8
Career Elective Program, 6-8
Career Resource Center in Library, 5-8
Career Film-of-the-Month, 8
Career Guidance Program, 5-8
Social Studies Curriculum Project, 5-8
Summer Opportunities Program, 6-8

HIGH SCHOOL LEVEL (9-12)

CAREER EXPLORATION & PREPARATION PROGRAM
Student Intern Program
Library Aide Program
Career Film-of-the-Month
Consumer Economics Course
American Vocational Guidance Week

DISTRICT-WIDE

CAREER CURRICULUM COUNCIL
Monthly Meeting

MILFORD TEACHER VISITATION TO KENT CENTER
Introduction to Vocational Education

FIGURE 15

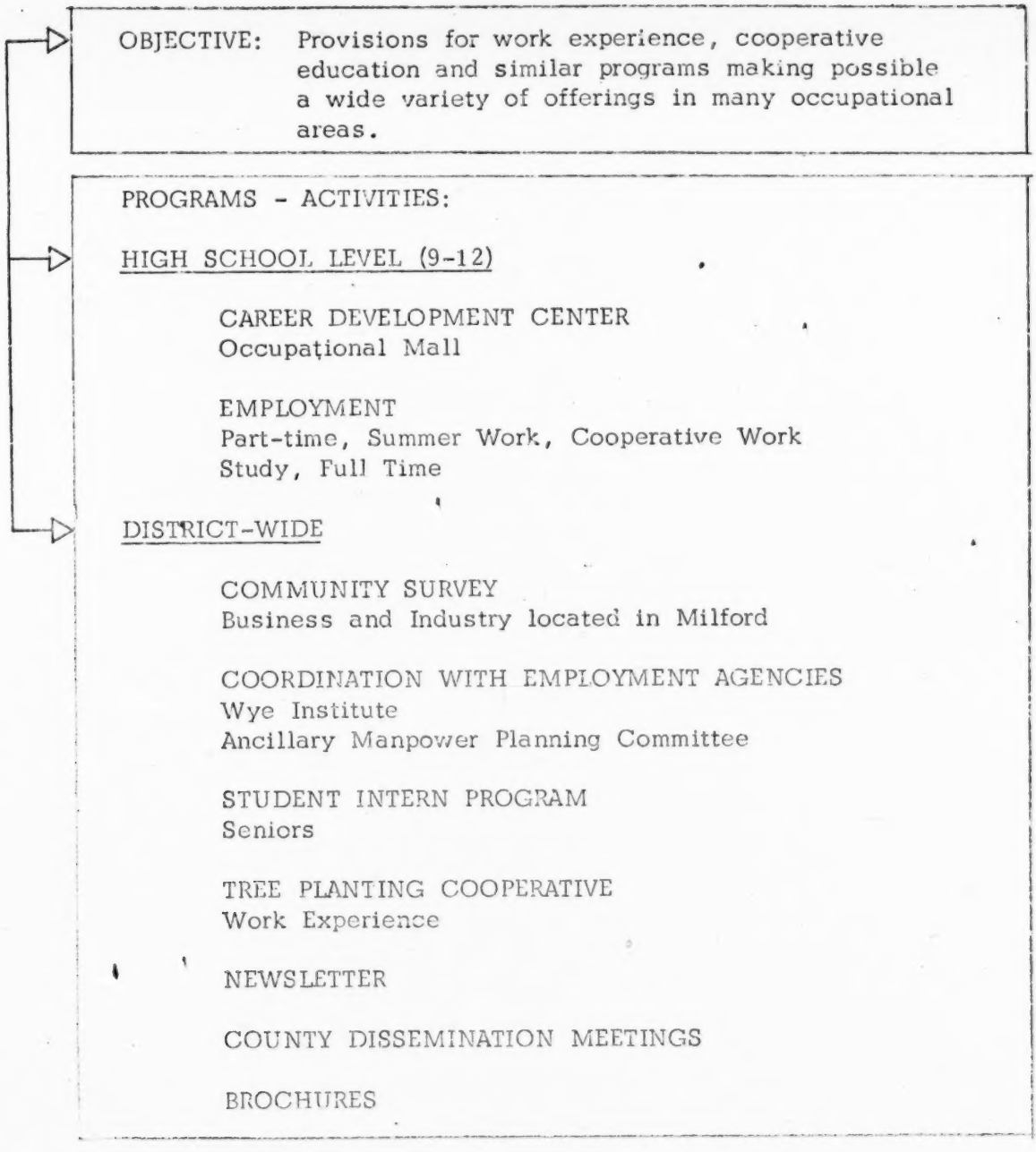

OBJECTIVE: Provisions for work experience, cooperative education and similar programs making possible a wide variety of offerings in many occupational areas.
PROGRAMS - ACTIVITIES:
HIGH SCHOOL LEVEL (9-12)
CAREER DEVELOPMENT CENTER
Occupational Mall
EMPLOYMENT
Part-time, Summer Work, Cooperative Work Study, Full Time
DISTRICT-WIDE
COMMUNITY SURVEY
Business and Industry located in Milford
COORDINATION WITH EMPLOYMENT AGENCIES
Wye Institute
Ancillary Manpower Planning Committee
STUDENT INTERN PROGRAM
Seniors
TREE PLANTING COOPERATIVE
Work Experience
NEWSLETTER
COUNTY DISSEMINATION MEETINGS
BROCHURES

FIGURE 16

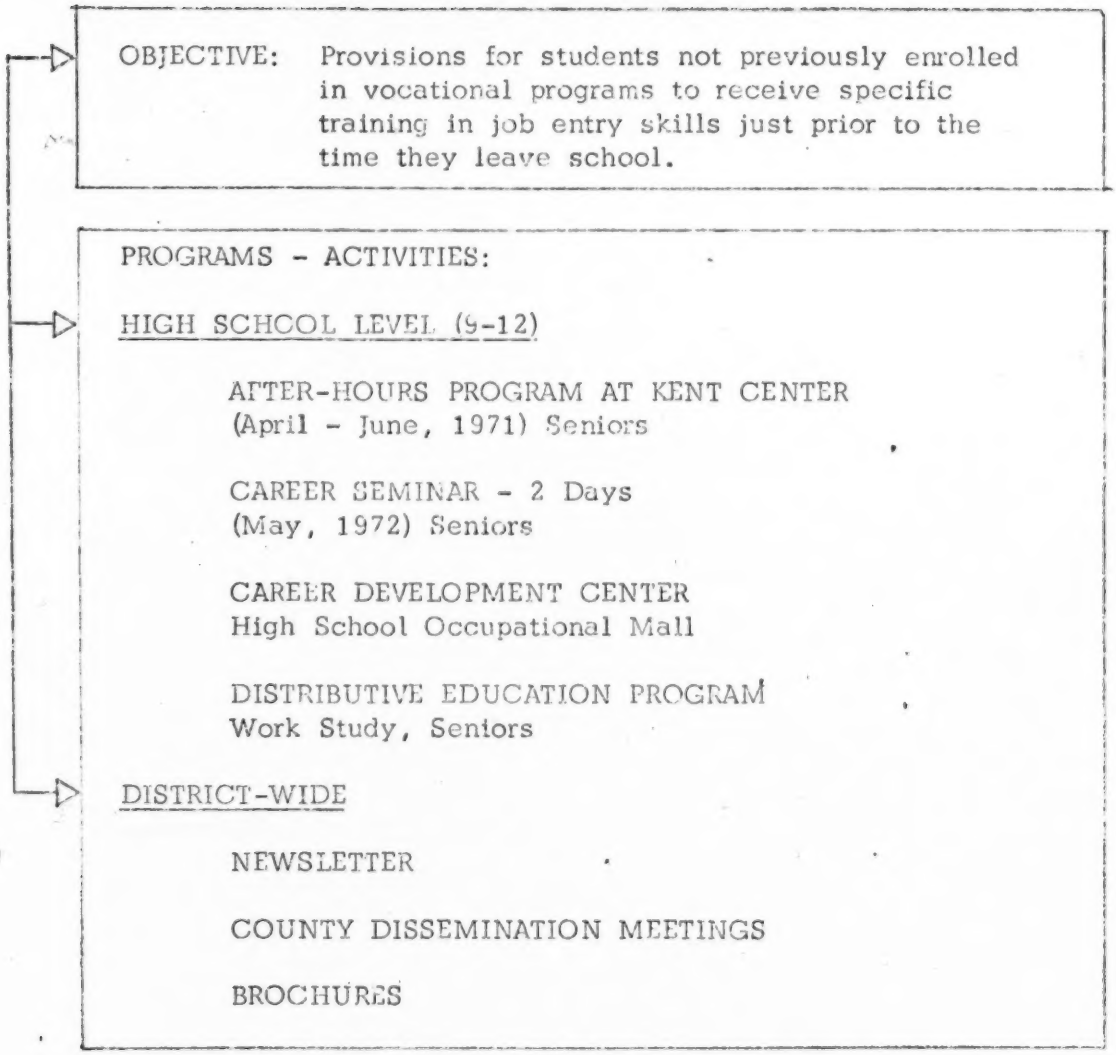

OBJECTIVE: Provisions for students not previously enrolled in vocational programs to receive specific training in job entry skills just prior to the time they leave school.
PROGRAMS - ACTIVITIES:
HIGH SCHOOL LEVEL (9-12)
AFTER-HOURS PROGRAM AT KENT CENTER
(April - June, 1971) Seniors
CAREER SEMINAR - 2 Days
(May, 1972) Seniors
CAREER DEVELOPMENT CENTER
High School Occupational Mall
DISTRIBUTIVE EDUCATION PROGRAM
Work Study, Seniors
DISTRICT-WIDE
NEWSLETTER
COUNTY DISSEMINATION MEETINGS
BROCHURES

FIGURE 17

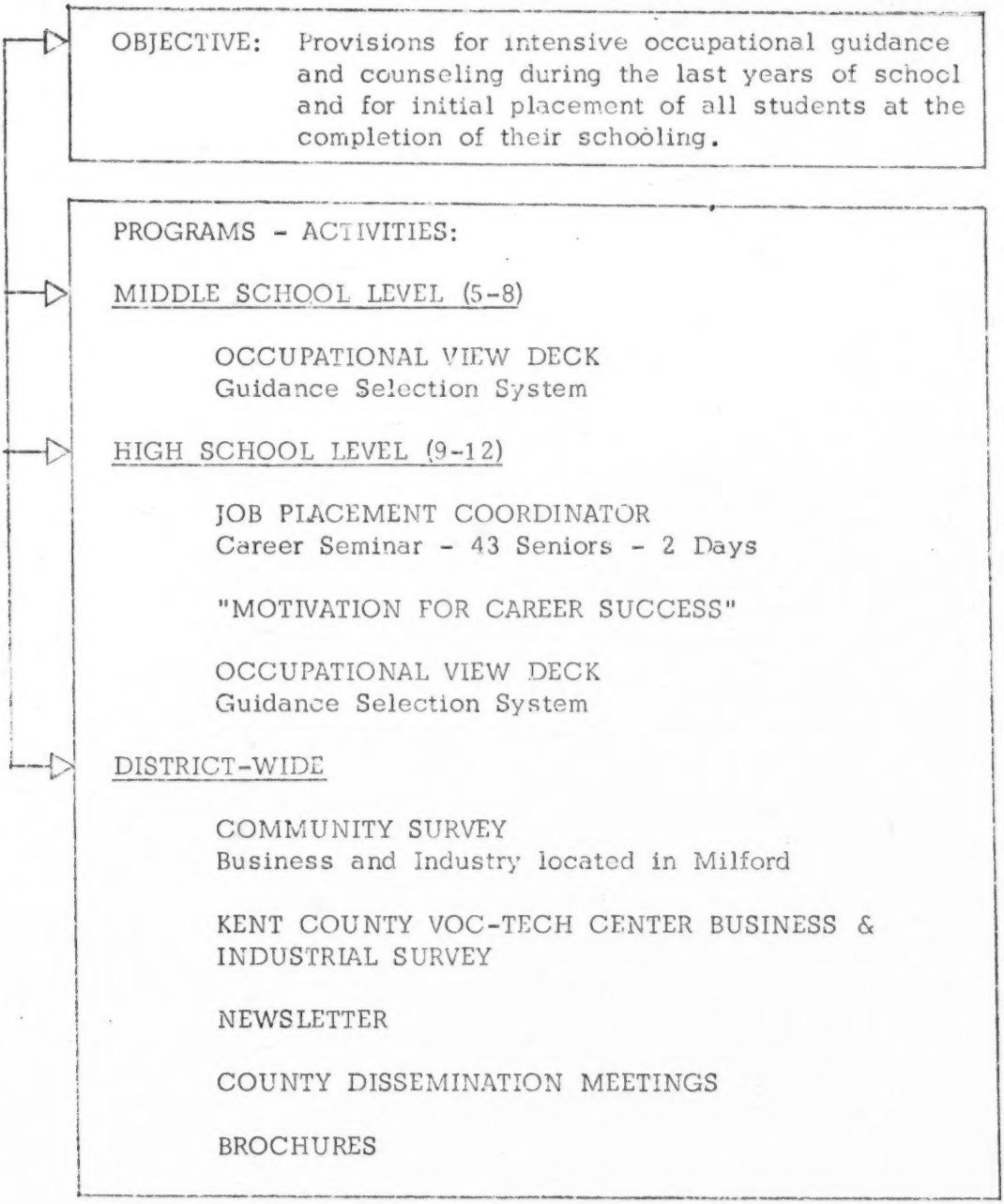
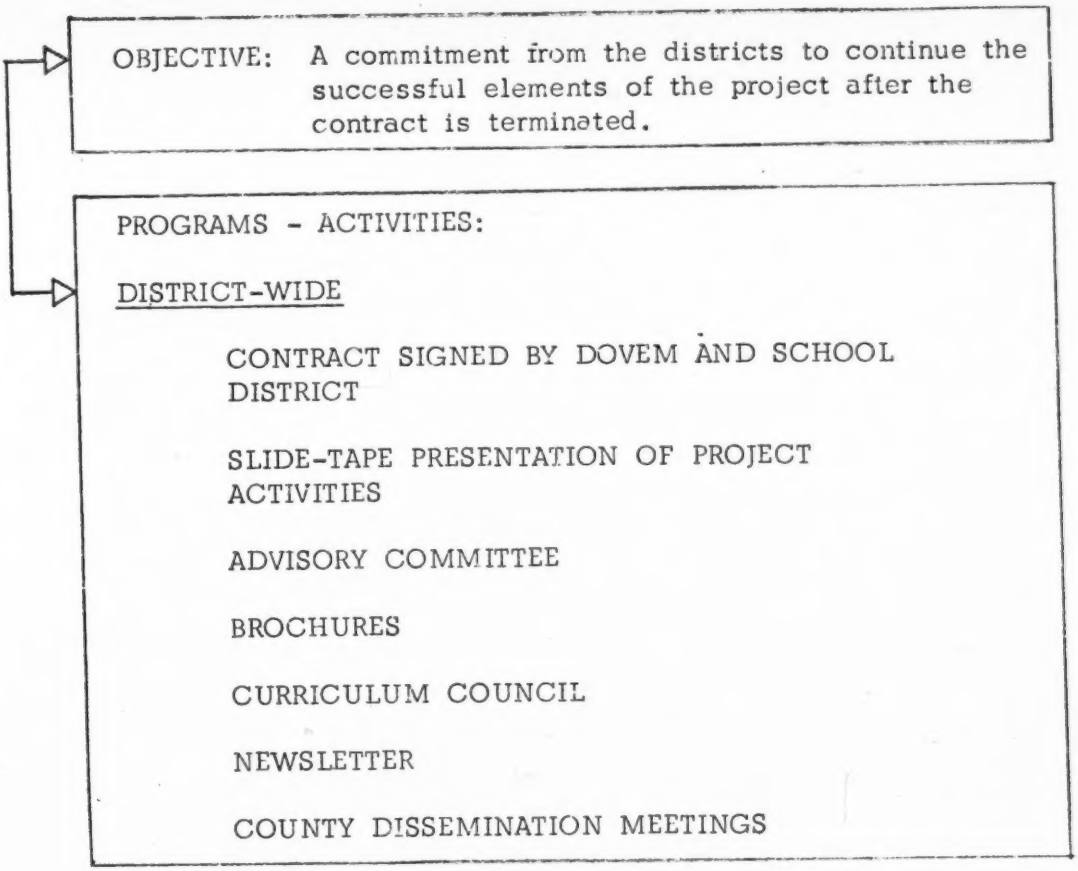

OBJECTIVE: Provisions for intensive occupational guidance and counseling during the last years of school and for initial placement of all students at the completion of their schooling.
PROGRAMS - ACTIVITIES:
MIDDLE SCHOOL LEVEL (5-8)
OCCUPATIONAL VIEW DECK
Guidance Selection System
HIGH SCHOOL LEVEL (9-12)
JOB PLACEMENT COORDINATOR
Career Seminar - 43 Seniors - 2 Days
"MOTIVATION FOR CAREER SUCCESS"
OCCUPATIONAL VIEW DECK
Guidance Selection System
DISTRICT-WIDE
COMMUNITY SURVEY
Business and Industry located in Milford
KENT COUNTY VOC-TECH CENTER BUSINESS & INDUSTRIAL SURVEY
NEWSLETTER
COUNTY DISSEMINATION MEETINGS
BROCHURES

FIGURE 18


OBJECTIVE: A commitment from the districts to continue the successful elements of the project after the contract is terminated.
PROGRAMS - ACTIVITIES:
DISTRICT-WIDE
CONTRACT SIGNED BY DOVEM AND SCHOOL DISTRICT
SLIDE-TAPE PRESENTATION OF PROJECT ACTIVITIES
ADVISORY COMMITTEE
BROCHURES
CURRICULUM COUNCIL
NEWSLETTER
COUNTY DISSEMINATION MEETINGS

The following individuals and groups were identified as being essential to the success of the career education effort: project staff, teachers, administrators, counselors, school board, parents, community groups and students.

An effort was made to introduce the concepts of career education to these individuals and groups. The project staff underwent an intensive program of reading, visiting and discussion designed to promote their understanding of career education.

Presentations were given to teachers, counselors and administrators stressing the goals and potential of career education. Teachers were selected as the key people in the career education system. Their understanding and support of the career concept was essential for the project's success. After the initial overview presentations, interested teachers were asked to volunteer for participation in workshop training, implementation, evaluation and follow-up. Those teachers interested in becoming involved in the model project were identified. Selected teachers were involved in curriculum development activities including awareness, orientation, planning, implementation, evaluation and refinement. Classroom supplies and materials necessary for the program were ordered, received and distributed. A procedure was established to expand the use of field trips and resource people in conjunction with career activities. Career resource centers were established in each school library. Teachers developed career learning units to be tested in

their classroom, evaluated and refined. These units were later compiled in booklet form for dissemination. A testing and interviewing program was developed and implemented in conjunction with curriculum activities. Both teachers and students were interviewed and tested to provide feedback information to the project staff.

The existing school system was studied to determine what changes were necessary to implement career education. The following changes were recommended:

Elementary Level

1. Provide equipment, supplies and training necessary to increase student participation in "hands-on" activity related to career clusters.
2. Provide teachers with information and training to infuse career awareness concepts into existing curriculum units.
3. Increase teacher use of field trips and resource people in relation to career activities.

Middle School Level

1. Expand industrial arts and home economics course offerings.
2. Establish career development laboratory to assist teaching teams with career education activities.
3. Revise elective program to include offerings in career areas of health, marketing and distribution, construction, business and office, and agri-business.

4. Establish career resource center in school library to assist both teachers and students in finding career information.
5. Encourage guidance counselors to use career guidance techniques and develop close cooperation with teaching teams.

High School Level

1. Establish a job placement service.
2. Expand work-study and cooperative work-experience programs.
3. Direct curriculum planning efforts toward career development themes.
4. Increase opportunity for students to attend area vocational center.
5. Increase student follow-up procedures to provide feedback for all areas of school program.
6. Encourage guidance counselors to use career guidance techniques and develop close cooperation with teachers.

Career Development Objectives

1. Elementary K-4

Encourage development of work habits and realistic attitudes toward work and occupations.

Identify and integrate occupational cluster information with basic educational skills.

Involve students in self-discovery activities.

2. Middle School (5-8)

Provide for "hands-on" experiences in simulated work environments as well as personal identification with role models from the community.

Organize career development centers for both prescriptive and discretionary learning experiences.

Strengthen career guidance activities.

3. High School (9-12)

Improve student performance in basic subject areas by unifying and focusing these areas on career development themes to make the subject matter more meaningful and relevant.

Expand the occupational programs in order to provide every student with intensive preparation in a selected occupational cluster in preparation for job entry or further education.

Expand work-study programs, cooperative education and job placement activities.

Results And Accomplishments

Elementary Career Programs (K-4)

1. Classroom Activities - Career Development Learning Units were developed by participating teachers and assembled in booklet form. These units were produced using the triad concept of school, teacher and community. Refer to Figure 7 for a graphic description of the triad concept.

Units were developed and tested by classroom teachers to

provide them with the experience of planning instruction under a broad career education umbrella. The units were also intended to serve as guides and examples for other teachers interested in career education. There was no attempt to impose an age-grade curriculum model on teachers. All units were teacher initiated and related school subject content to situations existing in the "world of people."

2. Workshops - Teacher in-service training was a major activity at the elementary school level. In-service training included one-week paid summer workshops, a half-day released time small group sessions and individual teacher assistance in the classroom. In-service training was organized into several phases. The first phase was to provide all teachers with an overview of the career education project and its goals and objectives. Rudimentary technical skills such as carpentry, electricity and printing were then mastered by teachers to develop the self-confidence required to implement career education concepts in the classroom. The next phase was to develop curriculum units that integrate school subject content with occupational areas found in the community. Stress was placed on using activities, experiments, resource people, field trips and individual student interest to vitalize the classroom subject content. These curriculum units were then tried, revised and disseminated.

Middle School Career Programs (5-8)

1. Career Development Laboratory - A major accomplishment at the middle school was the establishment and operation of a "career

lab." The career laboratory was designed to provide space, time, materials and personnel to carry out activities associated with career development. Teacher aides were employed to assist teaching teams with career education instruction.

These aides enabled teachers to involve students in "hands-on" activity related to classroom instruction. Funds were provided for student travel in connection with career education activities. Projects included a manufacturing company where the students designed, manufactured and sold a product.

Another activity involving the career laboratory was the study of a variety of careers associated with park development on an island in the Mispillion River.

2. Unified Arts - Industrial arts, home economics, art, music and physical education were organized to permit maximum student expression. Industrial arts and home economics programs were expanded with the addition of staff, equipment and materials. The traditional wood shop was augmented with programs in metalworking, electricity, plastics, manufacturing and construction. These areas of study reflected a truer representation of modern American industry and the myriad of career possibilities available to young people. Home economics included areas in home furnishing and child development in addition to cooking and sewing. Boys as well as girls studied careers in the consumer and homemaking area. Art instruction stressed

the practical use of fine art techniques in areas such as advertising and merchandising. Physical education programs moved toward the concept of life-time sports in addition to traditional team sports. Career possibilities in the area of recreation were included in the program.

3. Career Resource Center - An extensive career resource center operated in the middle school library. Many books, pamphlets, filmstrips, cassettes and other materials were purchased for use by both students and teachers. In addition to the regular cataloging system, these materials were identified by special labels as new career materials. They were grouped together in a special section of the library and were used extensively by students and teachers.

4. Career Guidance - Guidance counselors ordered and received career guidance and occupational exploration materials. They also operated a systematic program to involve all students in small group sessions to promote career awareness and develop decision-making skills. Counselors also assumed the scheduling responsibility for a "career film-of-the-month" program.

5. Elective Program - An extensive elective program operated in the middle school and offered students an opportunity to select from among forty (40) electives according to their interest. Many electives were designed to offer activities which focused on one of the career clusters. For example, the office practice elective included typing, clerical duties and associated skills; the construction

elective included design, carpentry and wiring.

6. Social Studies Curriculum Project - The University of Delaware, Milford Middle School and the project staff cooperated in a program to combine student teaching with curriculum development. Fifteen (15) social studies student teachers were assigned to the Milford Middle School. This concentration of student teachers facilitated closer supervision by the University staff as well as releasing regular teachers for curriculum development work. A revised social studies program to be implemented during the '73-'74 school year was developed by teachers, student teachers and project staff personnel. Career education components are prominent in the revised social studies curriculum.

High School Career Programs (9-12)

1. Intern Program - A student intern program offered seniors interested in teaching or child care an opportunity to work every afternoon with children and teachers in the district's elementary schools. Interns attended the high school in the morning to complete their regular instructional program. In the afternoon they were transported to selected elementary schools and worked with assigned teachers in a capacity similar to student teaching at the college level.

2. Career Guidance Program - The project increased emphasis on vocational awareness and career guidance in the high school. Project funds were used to purchase Occupational and College View

Decks. These guidance materials were used extensively by students. In addition, a commercially packaged guidance program entitled "Motivation for Career Success" was made available to counselors and students.

3. Fine Arts Program - The fine arts program used additional equipment provided by DOVEM to expand the scope of career awareness and exploration activities. Efforts were made to make students aware that a relationship exists between art program activities and various occupations.

4. Job Placement and Career Development Counseling - A job placement position was created during the early phases of project programming. The position encompasses all grade and administrative levels in order to implement comprehensive career development as required by the project's goals and objectives. Job placement was considered an important aspect at the highest level while identification of community career resource people was considered sine qua non for K-12 program development.

Table 3 lists the number of jobs identified by the placement service during the period of September 1970 to September 1973 project. Of the 162 job vacancies recorded by the placement officer, only eight remained unfilled as of September 1, 1973.

Additionally, the following results occurred as a direct result of programming designed to implement a job placement and counseling service in the school district: increased school community relations;

TABLE 3

JOB VACANCIES REPORTED BY EMPLOYERS TO HIGH SCHOOL JOB PLACEMENT OFFICER AND NUMBER OF JOBS FILLED BY STUDENTS

SIC*	NUMBER OF JOB VACANCIES	NUMBER EMPLOYED AND TYPE OF JOB				NUMBER NOT FILLED
		Summer	Part	Full	Coop.	
1721	1	1				
1751	2	1				1
2015	39		39			
2033	1			1		
2035	2			1		1
2294	5				5	
2321	2				1	1
2872	1					1
3273	2		1		1	
3461	1			1		
3611	4			3	1	
4212	3					3
4213	3		3			
4225	8		3	5		
4226	2		2			
4469	1	1				
5251	1			1		
5321	2		1	1		
5331	1					1
5411	2			2		
5499	1		1			
5541	2	1			1	
5611	1				1	
5812	7		7			
5982	2	2				
7231	1	1				
7290	1	1				
7299	32		32			
8011	3			3		
8061	6	6				
8021	5		5			
9108	18		18			
TOTAL	162	14	112	18	10	8

*SIC--Standard Industrial Classification Code

a larger percentage of high school students attended the county vocational center; teachers and students had an increased awareness of occupational opportunities; follow-up information was used to revise curricula; a substantial increase in the amount of career education information available to students through district-wide library resource centers; and state funding for career placement and counseling positions in every school district in Delaware.

A complete operational document entitled, "Establishment and Implementation of a K-12 Career Guidance and Job Placement Program" has been developed as a seperate appendix to this report and is recommended to anyone responsible for implementing a comprehensive student services program as part of a K-12 career education delivery system.

Kent County Vocational-Technical Center Programs

1. Teachers Visiting Kent Center - Substitutes were provided to free Milford School District teachers from their regular teaching duties to attend a one-day orientation visit to the Vocational Center. These teachers toured the Center and were provided with an explanation of the Center's program. This orientation was designed to make teachers aware of the myriad of opportunities available in a modern vocational education facility.

2. Milford Students Attending The Center - As a result of the visitation program, teachers, counselors and administrators gained an insightful understanding of the purpose and scope of

secondary vocational education. More positive attitudes toward vocational and career education were reflected by the fact that Kent Center's enrollment from Milford High School increased from 5 percent in 1970 to 14.5 percent in 1972 (Table 4).

District-Wide Activities

1. Field Trips And Resource People - The project has increased the utilization of field trips and resource people coming into classrooms. The project has provided funds for transportation and substitute teachers in order to release participating teachers for community-centered field trips.

2. Curriculum Council - The Director of Instruction, Assistant Principals of the High School and Middle School, Elementary School Principals and the Curriculum Coordinator were involved. The curriculum council was designed to coordinate curriculum activities at all levels within the Milford School District. The council met once a month under the direction of the Director of Instruction and all programs were discussed to insure correlation between schools.

3. Career Guidance Program - The project increased emphasis on vocational awareness and career guidance in the school system. Funds were provided for guidance materials that emphasized concepts of career development. The use of occupational view-deck materials was increased in the high school and middle school. In addition, a new package of guidance materials entitled Motivation For Career Success was made available to high school counselors.

TABLE 4

NUMBER AND PERCENTAGE OF MILFORD HIGH SCHOOL STUDENTS ATTENDING COUNTY AVTS'S

School Year	M.H.S. population 9-12	Kent County AVTS		Sussex County AVTS		Totals by year	
		No.	%	No.	%	No.	%
'70-'71	1163	62	5	74	6	136	11
'71-'72	1153	130	11	60	5	190	16
'72-'73	1240	180	14.5	101	8	281	22.5
'73-'74*	1260	137	10.8	85	6.7	222	17.6

*Projected from AVTS records

4. Summer Opportunities Program - The program was a five-week multi-clustered career exploration activity designed for students to explore various occupational areas at Kent Center. Examples of these occupational areas included: auto mechanics, cosmetology, photography and data processing. Many students in the Milford School District took advantage of this program.

5. Career Education Week - Career Education Week focused on occupational awareness. A career fair, poster contests, resource people, films, skits and field trips were used to convey the idea that career decisions are important and that students have a choice in determining their career.

6. Inter-Agency Coordination - The project staff communicated with a number of other agencies involved in employment, manpower and training. The job placement coordinator periodically attended meetings and conferences dealing with program development at local, state and national levels. The project director was also in contact with leaders in education and industry to insure that project activities were correlated with other programs.

7. Advisory Committee - This committee met regularly to be advised of the project's activities and to provide recommendations and guidelines for overall policy and conduct of the project.

Dissemination

A dissemination plan was developed to identify specific target groups and appropriate techniques needed to inform each specific

group. Table 5 identifies target groups and dissemination activities judged to be most effective for the particular group.

1. Tape/Slide Presentation - A tape/slide presentation was developed to explain the rationale, goals, objectives and procedures connected with the development of Delaware's Occupational Vocational Education Model. Slides were taken of activities within the schools and later synchronized with a tape recording. By combining media, it was possible to produce a lucid explanation concerning the project's major thrust--career education (Appendix A).

Another tape/slide presentation was developed and focused on job placement and counseling as an integral component of the career education delivery system. Appendix B contains the script portion of the presentation and should be reviewed by those who are planning the future development of job placement and counseling programs as part of an operational career education system.

2. Brochures - Three brochures were produced: one describing the project's scope, while the other two focus on career education at the elementary and middle school levels. These brochures were widely distributed to parents, students and professionals interested in the project.

3. Overhead Transparencies - A presentation was developed using overhead transparencies to explain the career development process to those individuals not familiar with it. This presentation was designed primarily for teachers and other educators.

TABLE 5

TARGET GROUP AND DISSEMINATION ACTIVITIES FOR EACH GROUP

DISSEMINATION ACTIVITIES / TARGET GROUPS	Teachers, Counselors, Administrators	Chief School Officers	Local School Board	Community Groups	Advisory Committee	Department of Public Instruction	School Board Association	State Legislature	State Superintendent	State Vocational Directors	State Research Coordinating Unit Directors	Office of Education	Ohio Center for Vocational Technical Education	National Center for Occupational Education, Raleigh, North Carolina
Tape/Slide Presentation	*	*	*	*	*	*	*					*		
Brochures	*	*	*	*	*	*	*	*				*		
Career Education Article Reprint	*	*	*	*	*	*	*		*	*	*	*	*	*
Quarterly, Interim and Final Reports		*	*		*	*			*	*	*	*		
Curriculum Units	*	*				*						*	*	*
Bibliography	*	*			*	*						*	*	*
Closed Circuit TV Programs	*	*	*											
Newsletter		*	*		*	*		*		*	*			
On-Site Visits			*	*		*						*		*

4. Radio - The local radio station aired several programs clarifying the purpose and activities of the model project. Job placement services were advertised via spot radio announcements.

5. Newspaper - The local newspaper printed several articles concerning the Model. Paid advertisements were also run to promote job placement efforts of the Model.

6. State And National - Over one hundred and fifty (150) written requests for project information were received from schools, colleges, universities and private institutions representing virtually every state in the nation. One hundred and twenty-six (126) interim and final reports have been distributed in Delaware.

Three (3) dissemination dinners were held during the final month of the project. One dinner meeting was scheduled in a central location to serve each of the three (3) counties in Delaware. A chief school officer and an assistant from each district in the respective county were invited to attend. A total of fifty-five (55) chief school officers and assistants attended the dissemination meetings.

As a result of these efforts, DOVEM's staff was invited to six (6) school districts in Delaware for the purpose of providing district personnel with information about operational career education programming.

Additionally, the project director has been asked on numerous occasions to present Delaware's Occupational Vocational Education

Model to local, state and national conferences focusing on the career education theme.

7. Newsletter - To complement DOVEM's dissemination effort, a newsletter was developed and distributed to all federal government agencies, chief state school officers, local educational leaders and those with special interest in career education at the university level.

8. Documents Of Special Interest - As dissemination plans developed, it became obvious that certain materials, e.g., instructional units, bibliographies, evaluation instruments, etc., were in great demand. Therefore, the project staff prepared five (5) specialized documents for distribution:

1). Career Education Resource Bibliography;

2). Career Development Learning Units - Elementary School;

3). Career Development Learning Units - Middle School;

4). The Establishment and Implementation of a K-12 Career Guidance and Job Placement Program; and

5). Career Development Data Gathering Instrumentation.

These documents have been widely disseminated to interested individuals and institutions involved with development of career education systems and packaged under separate cover for convenience. However, each individual document was designed to function as an independent appendix to this report.

Evaluation

Bivens and Associates, Inc., Dover, Delaware, was awarded a contract to evaluate DOVEM's three years of operation. Basically, findings indicated that all project objectives had been met. However, the elementary programs received significant praise from evaluators in terms of meeting stated objectives.

Appendix C contains the evaluation report produced by the external evaluation contractor, Bivens and Associates, Inc., Dover, Delaware.

In addition to external evaluation described above, the project's research assistant designed a formative evaluation to monitor internal components of elementary and middle school career education programs.

Appendix D contains an internal evaluation report for the elementary (K-4) career education program. Part II of the report covers the evaluation of middle school career education programs (5-8). A document containing an annotated bibliography of data gathering instrumentation used by the project staff entitled "Career Development Data Gathering Instrumentation" has been assembled under separate cover. These reports are recommended to individuals who are interested in monitoring developmental career education components.

Conclusions; Implications; Recommendations

A wide variety of innovative techniques were used to implement each of the project's objectives. Internal and external evaluators

indicated that the objectives of the model have been met.

The project's curriculum efforts can be summarized as an attempt to answer the question: Is the school doing everything it can to insure students relate school activities to home, community and occupational possibilities?

One implementation problem resulted in an expenditure of time and money that would not be necessary in many other school districts. The operating budget of the district has been consistantly below what is considered normal elsewhere. This condition forced the project to upgrade existing programs by the addition of staff and capital equipment. Money and time that could have been spent on innovation was by necessity used to build programs up to levels considered traditional in other districts. Industrial arts, home economics and audio-visual equipment was added to existing programs in order to provide a base for career education.

Curriculum development efforts required a considerable amount of review time in order to bring teachers to a satisfactory proficiency level in terms of basic writing and planning skills. Competency in writing behavioral objectives is a prerequisite for career education curriculum development.

The career concept itself was in a state of flux during the early phases of the project. Misconception and confusion among those involved diverted energy that otherwise would have been used more effectively. Many people thought career education was simply

a name change for vocational education. Other people thought career education was a revised guidance program. Career education was interpreted by still others as more "hands-on" activity in the classroom. Some people even thought that increasing the number of field trips was the answer. The confusion among terms such as job, career, occupation and vocation continues to cause misunderstanding.

It is recommended that the person charged with the responsibility of curriculum coordination become familiar with the "Career Education Monograph Series;" Robert L. Morgan and Mollie W. Shook, Editors; Center for Occupational Education, North Carolina State University, Raleigh, North Carolina. Specific attention is directed to Monograph No. 1, pages 7-10. This section outlines a plan for career education curriculum development and lists the following considerations:

1). Budget must anticipate all needed resources;

2). Teachers are the key to successful curriculum development;

3). All curriculum areas must be brought together for the implementation and design of educational programs;

4). Expertise already available should be utilized, including:
   a) curriculum materials
   b) community resources
   c) nationally-known personnel and
   d) people with prior experience;

5). Objectives should be specified;

6). Time for curriculum development should be available--use of time should be well planned; and

7). Needed curriculum resources for implementation should be in place before curriculum goes into the classroom.

It is apparent that project goals and objectives have been met. Data indicated that a wide variety of innovative techniques were used to implement each of the project's objectives.

An increasing number of school districts in Delaware are modeling their career education programs from designs and organizational concepts developed by DOVEM's staff. Operational success has been due to the excellent rapport and cooperation among project staff, district personnel and the State Department of Public Instruction's Vocational Division.

Although elementary and middle school programs continue to develop, it is doubtful that high school teachers are willing to make significant moves toward the total implementation of career education concepts.

It has become clear that a shift in emphasis toward an employer-centered model is required if meaningful results are to be obtained at the high school level. Although this model is not presently defined in specific terms, it is obvious that students in the eleventh and twelfth grades should spend at least one-half of their school day engaged in meaningful educational experiences outside school.

Data generated by the project indicated that several specific recommendations are in order:

1). School districts must take immediate steps to reallocate existing funds for continuation of career education;

2). If career education is to continue developmentally, in Delaware, a full-time high level administrative position must be created within each district's administrative structure and staffed with an individual with knowledge about career education; and

3). Delaware's State Department of Public Instruction must come to grips with the dearth of State R & D Programs designed to deliver efficient, rationally developed career education program components to all state residents.

APPENDIX A

AN EXPERIMENT IN CAREER EDUCATION

APPENDIX A

AN EXPERIMENT IN CAREER EDUCATION

A tape/slide presentation produced by
Delaware's Occupational Vocational Education Model

Change--the only constant in the decade of the 1970's--continues to roll on at a greater and greater pace. Each year the pace quickens, and each year the implications of change become more serious.

Nowhere is there a more fundamental need for change than in the way we prepare young people for the future.

Consider some facts.

Eight out of ten jobs in this decade will not require a college degree, yet only five (5) percent of the jobs will be available to the unskilled.

Young people between the ages of 16 and 34 already account for 67 percent of the work force.

Today, the job market and our educational system are operating independently. It is a simple matter to project the future and see real trouble coming unless something is done.

How can we bring them closer together?

How can the existing educational system be restructured to focus on children's needs in terms of the dynamic society in which they will continue to live and work, both now and in the future?

In summary, how do we go about the task of redirecting the school to serve the child as opposed to having the child serve subject matter disciplines?

How do we bring meaning, relevance and excitement into English, mathematics, science, history and music in terms of the requirements placed on young people living and working in the latter part of the 20th century?

The answer may lie in career education and the career development concept, the central theme around which an enlightened educational system can revolve.

The U. S. Office of Education defines career education--which Dr. Sidney Marland has set as his top priority--as a comprehensive educational program focusing on careers, which begins in Grade 1 or earlier and continues through the adult years. It includes a program of career orientation, exploration and job preparation for all students, and one major benefit is the students' performance in basic subjects should improve as the entire curriculum is made relevant and more meaningful.

Career education is the link between abstract learning and the real world of needs and applications. It does <u>not</u> attempt to force children into job slots at an early age, rather to explore career possibilities so they will be better prepared to make a choice when the need does come.

Career education is not a substitute for vocational, general or college preparatory education. It makes no distinction between academic and vocational. Career education is all educational experiences geared to preparation for economic independence. It must permeate the whole public education system, kindergarten through 12th grade or beyond.

It includes the notion that the school's focus must be expanded to involve the community so as to bring meaning and realism to all school activities.

The basics of reading, writing and arithmetic aren't forgotten. They are intertwined into concrete applications, and in this blend of the academic and the vocational, the child is better able to learn.

One experiment in career education is going on in lower Delaware: Delaware's Occupational Vocational Education Model. Chosen to participate in the three-year project were the Kent County Vocational Technical School District, headed by Superintendent William Pfeiffer (shown on the left), and the Milford School District, headed by Superintendent Charles McLaughlin (shown in the center). With them is Joseph English, Project Director.

Assisting is a fifteen-member Advisory Council consisting of industrialists, legislators, businessmen and community leaders.

Let's take a brief look at what is going on at Delaware's Occupational Vocational Education Model, as an example of a career education program at work.

There are three phases to the kindergarten through 12th grade program.

The first is the phase from kindergarten through Grade 4. Here the aim is to develop positive attitudes toward work.

During the summer, teachers undergo workshop training and learn many technical skills themselves.

A variety of activities are covered, activities like woodworking, electricity, graphics, metal enameling and cardboard carpentry.

First graders present programs such as Peter and the Wolf, where they do everything from bringing in the materials, to measuring the wood, using tools, building the stage, using sewing machines to make curtains, and making the puppets.

The project involves the use of mathematics and other conventional subjects and involves each child in some way, whether it be as carpenter, stagehand, or announcer.

Children are taught vocabulary by studying the names of tools and materials used for the project.

Kindergarten students have refinished school furniture. One boy, the son of a painter, gets to try out his father's trade.

In the second grade, a student may work with electricity, and see how a circuit is completed. It's a good way to learn about science.

Elementary youngsters have set up a small assembly line and refinished sanding blocks used in music class.

Field trips are used to let kids see and talk with people working at various jobs in the community.

The second phase includes Grades 5-8 and an emphasis on career orientation.

Teachers work in teams and get together frequently for planning. Included are the so-called unified arts--industrial arts, home economics, art, music, physical education. Girls not only sew but work in the wood shop. Plastic forming, metalworking, foundry, welding, woodworking and wiring are just some of the topics covered.

Boys have the opportunity to try their hand at cooking, sewing, and other activities related to careers in the consumer and homemaking area. A career resource center has been established in the school library to assist both students and teachers in obtaining career information.

A career laboratory is operating in the middle school for use by fifth and sixth grade students. A teacher aide is available to assist the teaching team in carrying out career education activities.

One such activity involved the study of the manufacturing cluster of careers. The students formed a company, designed, constructed and sold a product. "Gone With The Wind, Inc.," manufactured and sold a fine plastic kite.

Students assumed a variety of career roles including member of the board of directors, bookkeeper, engineer, clerk, cashier, salesman, advertising copy writer, production manager, assembly line

worker and quality control inspector. These jobs cover a wide range of educational preparation.

In this way, they were able to relate to a variety of occupations, including the balance sheet aspect of running one's own business. Mathematics, advertising, marketing--skills such as these were involved. An elective program has been established to let children explore the business and office cluster of careers.

There is also a program for the summer between 6th and 7th grades where students can be exposed to the Kent Center and activities going on there. Auto mechanics, welding, plumbing, masonry, cosmetology and printing are included in the orientation. The object is not to teach children a trade but rather to show them the variety of things going on. This broadens their experience and helps them decide later if they want to attend the Center's program.

The third and final phase covers Grades 9 through 12. Here the emphasis is on career exploration and preparation. Some more specific skills--computer keypunching, cosmetology, auto mechanics--are learned in preparation of specific jobs. Remember that many of these children go directly on to work after completing high school.

A work-study program also is included. A youth can work for the City of Milford checking water meters, for instance, and still continue his education. A student intern course gives students interested in teaching or child care a chance to work with kids in the elementary school. The course helps the high schoolers identify

their interest and ability in teaching as a career and at the same time helps the elementary teachers give more individual aid to youngsters. Approximately one-half of the interns found the experience reinforcing and intend to pursue teaching as a career. The others discovered that the actual classroom experience was not what they expected teaching to be. This experience permitted these students to explore teaching and discover that it may not be for them.

A job placement coordinator works closely with the high school counselors, employers and students. Through a community survey, personal contacts and regular follow-up he finds job openings for full and part-time work. The job placement office in the high school has provided a much needed service for all students. Special attempts have been made to identify those students with no career plans and impress upon them the necessity for career planning and preparation. The placement coordinator has also increased student awareness of post-secondary technical and professional training available. Students are shown that a job ladder exists in each career field. A person's position on the ladder depends on attitude, ability and training.

The counselors provide occupational guidance with the goal of initial placement of all students upon completion of schooling. The state university feels that college-bound students need career information and work experience just as much as those students

not going to college. A career-based instructional package entitled "Motivation For Career Success" is being used at the high school. This package of materials enables the student to become personally involved in the planning and selection of his occupational future.

Teachers--both at the Center and within the local district--interact. For example, the industrial arts teacher at the Milford High School is shown here talking to the drafting teacher at Kent Center. The high school English teacher uses the student's interest in auto mechanics to increase his communication skills.

Dave Burton, a prominent businessman in the community says, "It is evident that a significant number of today's students are not motivated to learn in school. In the past, most of these young men and women could leave school and find employment. The job then became their school, and many succeeded in educating themselves.

"Today the opportunities in the job market for unskilled people becoming increasingly limited. Our schools, therefore, must do a better job of educating students than in the past.

"The career education concept is a promising way to make learning more real and stimulating. If successful, it can make the difference between success and failure to many young people."

The Milford School District has a major career program at the high school--The Diversified Occupations Mall. The purpose of this facility is to provide students with an employable skill before they graduate. Instruction is offered in food service, hospitality,

ornamental-horticulture, auto service, contracting and handyman service. Experiences involving actual work in the occupation being studied are offered at the high school facility. An option to transfer to the vocational center is available to interested students.

Curriculum is planned around the "cluster" concept at all levels in the school system. The Office of Education has devised a system of classifying occupations into one of fifteen clusters or areas. This enables students to learn about a variety of occupational "clusters" in a systematic way.

A comprehensive evaluation of the model is conducted by a qualified external evaluator. Interviews, surveys, test data and group discussion are used to determine how well the model's stated objectives are being met.

Another role of Delaware's Occupational Vocational Education Model is to disseminate information on its work and on career education. Presentations such as this and other informational material are distributed to the local community, other school districts and other states.

Here's Joe English:

"A project of this nature provides us with a unique opportunity to apply the results of fifty years of research in the areas of learning, child development, vocational psychology and career guidance to a real, viable school setting.

"DOVEM, as we have affectionately dubbed our project, is not restricted to the development of vocational components geared entirely toward specific employment, but rather, career clusters serve as the central focus of curriculum development.

"Even more fundamental is the fact that career education begins in kindergarten at a time when the child is most receptive to values, habits and attitudes necessary to function in a technological society."

School systems must be a part of the changing times or be excluded from them.

Change.

Are we in education, are we among the general public, prepared to meet the challenge of change?

If we are, career education can be the vehicle to carry us into a meaningful tomorrow.

(THE END)

APPENDIX B

CAREER GUIDANCE & JOB PLACEMENT COUNSELOR

APPENDIX B

CAREER GUIDANCE & JOB PLACEMENT COUNSELOR

A tape/slide presentation produced by
Delaware's Occupational Vocational Education Model

What is the job of a career guidance and job placement counselor?

It is his responsibility as a member of the educational team to provide career information to teachers, counselors and students. This information will lead to the placement of students in part-time and full-time jobs or training programs.

Let us consider some facts supporting the need for a career guidance and job placement counselor. The Department of Labor has published the following statistics: less than 5 percent of the jobs available are for the unskilled worker; in this decade, eight out of ten job openings will not require a four-year college degree; two out of three unemployed are college graduates; and the average American changes jobs seven times in a lifetime, with job dissatisfaction being the major factor.

This graph illustrates the latest statistics on Delaware graduates. They were gathered in 1968 by surveying the school counselors on the whereabouts of their graduates.

All students need career counseling, however, some have an immediate need. Indications are that 63 percent of the high school seniors fall into this category. Recognizing the need, Delaware

has allocated funds for career guidance and job placement counselors.

What type of a person is needed in this job?

First, he must be capable of meeting and communicating with a wide variety of people. Second, a pleasant personality is advantageous; and last, but by no means least, he must be a good salesman.

In addition to these personal characteristics, he should have a working knowledge concerning interviewing procedures; sources of occupational information; manpower needs and programs; formulation of survey and evaluation instruments; design and implementation of a follow-up survey; and first-hand experiences in a variety of working environments.

In order to provide expertise needed in initiating an industrial and business survey, a contract was negotiated with the Boeing Company. A representative of the Boeing Company assisted in developing the survey instrument and interviewing procedures.

The role of a career guidance and job placement counselor can be divided into three major phases.

PHASE 1 - Analyze employment opportunities in the local community.

As a career guidance and job placement counselor, your first responsibility is to know your local community. Start out by establishing geographic boundaries for the survey.

Check out the information files within your school district--

they usually contain a tremendous amount of community information.

Do not overlook long-time resident teachers. They possess a vast reservoir of community information regarding employers and employment.

Close coordination is necessary with special area teachers, such as distributive education, diversified occupations and office occupations.

The Chamber of Commerce or Retail Merchant's Associations are excellent sources for obtaining listings of local businesses and industries.

The Department of Labor has tabulated manpower data useful to the career guidance and job placement counselor. The Job Bank is an excellent source of occupational information regarding present job vacancies, and it is updated every month. Professional associations and unions are usually cooperative.

When preparing for the actual survey, a standard industrial code number should be given to all businesses to be surveyed. Use the Standard Industrial Code Manual's classification system. Prearrange the interviews by telephone.

If possible take a tour of the business or industry, taking mental notes of the type of work and skills employed, take pictures if time allows and the management does not object.

Jobs within the industries should be classified. Either the Dictionary of Occupational Titles or the United States Office of

Education's classification system may be used.

All data gathered should be available to teachers, counselors, students or anyone interested in occupations within the community. The survey should be introduced to the community through radio announcements and notices published in the local newspaper.

PHASE II - Utilization of Occupational Information.

To have more than token success in this phase, there must be administrative support when developing meaningful and relevant curricula for all grade levels.

Close coordination with teachers is essential as they develop curricula to integrate the career concepts into classroom activities.

Your reservoir of occupational information must extend beyond the local community. Students' vocational aspirations are limited by their occupational awareness.

Actual work experiences are essential as students develop attitudes and concepts about work. Full-time, part-time, summer, cooperative work and volunteer work programs are methods of experiencing the "World of Work" and these experiences should be offered to all students. Field trips, outside resource speakers, plant tours, and workshops all contribute to a students career awareness.

Students with definite career plans need realistic exposure to the working environment and responsibilities, of their chosen professions.

Close coordination with the counseling staff is essential. Counseling, individually or by groups, contributes to sound career development.

Filing systems are needed to record information regarding students and job vacancies. In addition to demographic data, obtain the following: (1) is transporation available; (2) previous work experiences; (3) all businesses and industries contacted seeking employment; and (4) the students' long-range career goals.

The most important item of information on the Employers' Job Specifications Card is the special skills and requirements needed to function on the job.

Every dropout should be required to be interviewed by the career guidance and job placement counselor.

PHASE III - Evaluation and Follow-up

Evaluation of student performance on the job is necessary if cooperation is to exist between the employer and the educator. A follow-up is a continuous process, providing evaluation and feedback to the educational system and the employer.

All seniors need to become knowledgeable concerning the follow-up procedures. It could be structured into a required class period.

A random sample from the graduating classes would provide adequate follow-up data. Analysis of the evaluation and the follow-up data should be reviewed by all personnel responsible for curricula development.

In summary, the career guidance and job placement counselor is a vital member of our educational team. All students need career guidance, occupational information and educational experiences in preparation to make career decisions in our highly competitive and rapidly changing technological "World of Work."

APPENDIX C

EXTERNAL EVALUATION

Evaluation Report

AN OCCUPATIONAL-VOCATIONAL EDUCATION MODEL

Submitted to

Mr. Joseph English
Project Director
Milford, Delaware

by

Bivens & Associates, Inc.
Planning Consultants

August 15, 1973

bivens & associates inc. PLANNING CONSULTANTS

231 WEST LOOCKERMAN ST. DOVER, DELAWARE 19901 302/674-4819
635 W. INDIAN SCHOOL RD. PHOENIX, ARIZONA 85013 602/279-1913

August 23, 1973

Mr. Joseph English, Project Director
Occupational-Vocational Education Model
906 Lakeview Avenue
Milford, Delaware 19963

Dear Mr. English:

Bivens & Associates, Inc. is pleased to transmit to you this evaluation report for the third year of the Delaware Occupational-Vocational Education Model in accordance with the provisions of our contract.

This evaluation report includes a brief summary of the first and second years' evaluations. Emphasis on the third and final year was directed toward objective 5 of the DOVEM - that is - to ascertain the degree of commitment of the Milford School District to continue the successful elements of the Model.

We appreciate the opportunity to work with you and feel confident that this important program which you spearheaded will continue to be successful.

Sincerely,

John A. Bivens Jr.

John A. Bivens, Jr., AIP
President

Enclosure
RHM:er

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INTRODUCTION AND BACKGROUND

The Occupational-Vocational Education Model for the State of Delaware (DOVEM) was established by agreement between the Kent County Vocational Technical School District and the Milford School District. The program was made possible by a three year federal grant from the U.S. Office of Education.

Each year an independent evaluation is required by the Office of Education. This evaluation report is in compliance with this requirement as well as to hopefully assist in the improvement of the model. Bivens & Associates, Inc., Planning Consultants, of Dover, Delaware was selected to conduct the evaluation.

This evaluation report covers the third year of the project and includes a summary of the first two evaluations.

The document Preparing Evaluation Reports, published by the U.S. Office of Education, was followed in the preparation of this evaluation report, although a minor adjustment in the outline was made to reflect the specifications and unique features of the Delaware Model.

Bivens & Associates, Inc. utilized personal interviews and review of pertinent documents, reports, and other materials in the conduct of the evaluation. The staff of the Occupational-Vocational Education Model, the teachers,

administrators, and other individuals displayed the utmost cooperation in this effort. Special appreciation is expressed to Mr. Joseph English, Project Director; Mr. Arthur Bright, Job Placement Coordinator; and Mr. Carl Hoffman, Curriculum Coordinator.

LOCALE

The Milford School District is located in the southeastern corner of Kent County, Delaware, with a portion extending into adjacent Sussex County. The District contains some 166 square miles with an estimated 18,000 total population. The communities of Milford and Houston account for a little less than half of the total population, the remainder being distributed throughout the County's rural areas.

According to the Comprehensive Plan for the City of Milford prepared by Herbert Smith Associates, the 1970 population figure was 5,374 persons. Projections of this base figure indicate a total population of 5,820 by 1980 and 6,303 by 1990. Accurate population data are unavailable for the geographic boundaries of the Milford School District because of lack of comparability between census tracts and school district boundaries.

The Directory of Central States, Manufacturing, lists 24 manufacturers in the Milford area with an estimated employment of 2,060. A brief analysis of the nature of the manu-

facturers within the area indicates the potential availability of jobs for non-skilled to semi-skilled workers -- potential employment for graduates of the Milford High School.

THE SCHOOL SYSTEM

Six schools operate within the Milford School District with an average enrollment of about 4,200 for the three year period (1970-1973). Over 180 teachers and 26 administrators were employed by these schools.

The three year period presented a few changes in the overall system of the schools. The most important of these changes occurred in the 1971-72 school year when fifth and sixth grade students were moved from Benjamin Banneker Elementary School to the Middle School. The following schools serve grades K-4: Lulu M. Ross, Benjamin Banneker, Evelyn L. Morris, and West Milford. Grades five through eight attend the Middle School with grades nine through twelve attending the High School.

An effort to monitor graduated students from the Milford High School has been tried in the past with poor results. It was hoped that these data would provide significant assistance in the design of the occupational vocational program, particularly in the upper grade levels. A summary of movement of graduated students from the Milford High School was not attempted during the Project Period due to two main factors:

1. Response from graduates in previous years had not been significant.
2. An accurate and meaningful measuring instrument has not been effected.

However, the statistics gathered for 1969 graduates are presented below: A comparison of this data with those that may be developed in future years may prove to be of significant value in evaluating part of the overall success of occupational-vocational education within the District.

SUMMARY OF MOVEMENT OF GRADUATES

MILFORD HIGH SCHOOL

1969

Area	Male	Female	Total
University of Delaware	11	11	22
Delaware State College	2	4	6
Other Colleges	9	6	15
Junior Colleges	25	16	41
Armed Forces	18	1	19
Employed	16	16	32
Unemployed	3	1	4
Homemaking	-	14	14
Unknown	6	9	15
Not Reported	-	-	6
			174

Of the 174 graduates, 84 or 48% continued their education at other facilities. Approximately 51% of the 1969 graduates of Kent County continued their post high school education. The state figure for the same category in the same year was between 51% and 52%.

The statewide figure for students entering employment was 29% while the figures for Milford High School were 18%.

The majority of the categories listed above and the percentages of students entering the various endeavors are closely in line with the figures for the entire State of Delaware.

SCOPE OF DOVEM PROGRAM

The following goals and objectives have been established for the model:

Goals

1. To create a meaningful, cooperative effort between the Kent County Vocational-Technical School District and the Milford School District for the purpose of expanding career education to meet the needs of all children served by the District.
2. To establish a system to serve as a model for future expansion of career education in Delaware.

Objectives

1. Occupational orientation at elementary and secondary levels.
2. Development of work experience and cooperative education programs.
3. Specific training in job-entry skills for students not previously enrolled in vocational education programs prior to leaving school.
4. Intensive occupational guidance and counseling for all students during the last years of secondary school for the purpose of insuring initional job placement.

5. A commitment from the District to continue the successful elements of the project after the contract is terminated.

PROJECT EVALUATION

SUMMARY OF FIRST TWO YEARS

In 1970 there were 4,168 students attending school in the Milford School District.

During the first year of operation, the emphasis of the Occupational-Vocational Education Model was on planning. A competent staff was assembled and the project was well organized with each staff member having a clear understanding of his responsibility. In addition several significant activities were initiated that year.

A Technology for Children (T4C) program was instituted in the elementary schools but with uneven results. The voluntary Student Aide Program, directly supportive of the T4C Program, was started and obtained important student involvement and stimulated personal interests. Workshops for elementary teachers in the T4C program were held during the summer. Workshops to develop plans for the career development program implementation for the Middle School and High School teachers were also successfully held.

A cooperative program was established with the Kent Vocational-Technical Center for high school students. An "after hours" program was initiated but due to return transportation problems, the potential impact of this program was diminished. A special vocational education orientation program for teachers was held at the Kent Center through the provision of substitutes. This program was successful and

increased the interest and participation by teachers in the Milford School District in other Model activities.

A Career Development Laboratory was established in the Middle School to introduce the occupational (job) cluster concept.

The Job Placement Coordinator conducted surveys of community businesses and industries to ascertain their needs and to solicit cooperation. He worked closely with counselors in the District and developed plans for the utilization of the Occupational Mall.

Plans were made to establish an evaluation monitoring system to monitor student and teacher change within the various programs of the Model.

An Advisory Council for the Model was formed. During the first year, however, the Council had relatively little impact on the program planning. As Council activity increased, the program was strengthened and community awareness increased. A Community Awareness Program was initiated with professional public relations assistance.

At the conclusion of the first year, the Occupational-Vocational Education Model for Delaware was organized and staffed with competent, innovative individuals. Comprehensive program plans were established, some educational experiments were conducted with mixed success, and various activities

were established to meet the objectives of the Program. The Model was felt to be off to a good start during its first year with the belief that an effective program would continue to be carried out which will meet the objectives.

The major emphasis upon the second years' activities of the Delaware Occupational Vocational Education Model were Program Development and Demonstration.

The Technology for Children (T-4-C) element was expanded to all of the elementary schools within the District. Pre-training for teachers involved in this element was continuous but was not sufficient to meet teachers' stated needs. The teachers strongly supported the application of training sessions but felt that more were needed to provide a more effective feel for teaching occupational-vocational/career oriented subjects.

The role of the Job Placement Coordinator at the high school was expanded and increased during the second year. In an effort to provide intensive occupational guidance and counseling for all students during the last years of secondary school, the Project added more counselors at the high school.

Although standardized instruments and test designs were administered at the elementary levels (T-4-C Program), they did not effectively prove product outcomes during the models second year.

The Advisory Council continued to function but without a defined plan of operation. One main task of this body was to provide communication between the Project and the Community, i.e., community awareness. Evidence of a successful effort in this respect was not available.

The Delaware Occupational Vocational Education Model was found to be replying to all of its stated objectives. However, some objectives were being fulfilled to a larger extent than others.

OVERALL EVALUATION

The stated goal and objectives of the Delaware Occupational Vocational Education Model provide the bases from which to assess and evaluate the operation of the project. Included below are the objectives as stated with a brief evaluative summary.

A. Occupational Orientation at Elementary and Secondary Levels.

Of all of the elements reviewed in the overall operation of the DOVEM, this objective appears to be best met. The reported individual class room projects and teacher interviews indicated concentrated activity throughout the programs three years to support this objective. The 1972-73 school year witnessed a greater student awareness of occupational orientation as well as an increased awareness of teachers and instructors as to their roles. However, as in the previous years evaluation, a great deal of interest was shown for more and continued training for teachers.

Analysis of teacher response to questions pertaining to the DOVEM indicate that the program has:

a. Created a greater motivation on the part of the student towards school attendance.

b. Tended to decrease disciplinary problems.

c. Provided the student a greater awareness of safety practices through the utilization of tools and other mechanical devices.

d. Helped the otherwise under achievers gain confidence and a sense of accomplishment.

e. Given the student a much more realistic picture of the world of work, particularly those individuals who because of economic circumstances receive little of this type of edification outside of school.

f. Stimulated the student to investigate further the conventional disciplines such as math, science and social studies.

g. Provided a situation whereby communications skills can be developed through student participation.

Limitations of the program as seen by teachers.

a. The lack of classroom time to adequately integrate career education programs with other curriculum areas.

b. Insufficient knowledge on the part of the teacher regarding the various careers.

c. Lack of assistance in the classroom to most effectively monitor the many activities that may be going on at one time.

d. Insufficient classroom space.

B. Development of Work Experience and Cooperative Education Programs

A significant increase of students attending the Kent and Sussex County Vocational Technical Schools occurred throughout the Program's three years. This increase may be related to occupational awareness created by the DOVEM and by teacher involvement in programs at the DOVEM sponsored centers. Approximately 11% of the students of Milford High School participated in the program during the 1970-71 year while 1971-72 and 1972-73 figures total about 16% and 22% respectively.

The job placement coordinator has been a busy individual developing work experience and cooperative education programs. The completion of a survey of forty-six industries in the Milford area served as an invaluable tool for the job placement of students. Since the job placement coordinator's contacts with the community established a conduit for information dissemination, additional responsibilities were given to him to assist in the overall public relations effort in the community.

The opening and subsequent operation of the Occupation Mall served to increase the effectiveness of this objective.

C. Specific Training in Job-Entry Skills for Students not Previously Enrolled in Vocational Education Programs Prior to Leaving School.

This objective is directed to the students in an effort to assist them in preparing for the formalities of obtaining a job; resume preparation, how to look for a job, how to prepare for an interview, etc. The Job Placement Coordinator conducted periodic seminars with seniors to acquaint them with various non-directive job entry skills. The high school counselors conducted individual sessions with graduating students who were faced with this problem. Individual assistance was also provided for post-graduate students who were still without jobs and unsure of what course of action to take in seeking employment.

D. Intensive Occupational Guidance and Counseling for all Students During the Last Years of Secondary School for the Purpose of Insuring Initial Job Placement.

During the three year program additional counselors were added to the Milford School District, their efforts

being continually monitored by the Job Placement Coordinator. Efforts to provide intensive occupational guidance and counseling for all students have been made. The effectiveness of these efforts should be analyzed and measured by continued monitoring of Milford High School graduates.

E. A Commitment from the District to Continue the Successful Elements of the Projected after the Contract is Terminated.

Seven proposed goals for Delaware Occupational/ Vocational Model were presented to the Milford School District for approval. In June, 1972 the District indicated approval of the following goals:

1. To make all educational subjects more meaningful and relevant to the student through restructing and focusing instruction around a career development theme.
2. To provide all students with guidance, counseling, and instruction needed to develop their self-awareness and self-direction; to expand their occupational awareness and aspirations; and to develop appropriate attitudes about the personal and social significance of work.

3. To provide an opportunity for all students to gain an entry level marketable skill prior to their leaving school.

4. To prepare all students completing secondary school with the knowledge and skill to pursue further education or to become employed and preferably both.

5. To provide a placement service to insure that every student reaches the next step in his development whether it be employment or further education.

6. To build into the educational system greater utilization and coordination of community resources in order for students to learn and actively participate in the process of relating "academic school experiences" to the vocational role patterns existing in the community.

7. To increase the educational and occupational options available to all students by providing for a flexibie educational system which facilitates entrance and re-entrance into either the world of work or the educational system.

These seven goals have been recently re-affirmed by District Officials.

The attainment of these seven goals will to a great extent be dependent on the amount of funds available to carry out the various program activities exemplified in the Model. It appears at the time of this evaluation that the lack of sufficient fiscal resources will allow for a moderate sustainment of the DOVEM program activities. Those facets of the Model that the District's schools have absorbed into their curriculum, and can carry out with the resources they have will continue. Other program activities that require significant funding for their operation may or may not be sustained depending upon the availability and allocation of funds.

School District officials are presently establishing priorities in regard to those activities that will continue and those that hold little chance (because of expense) of being sustained. Happily, the School District appears committed to a majority of the DOVEM activities, and in any case to the "real guts" of the Model.

Almost all of the vocational-occupational career exploration programs that were started in the Middle School will continue. They will be continued in some cases under the same title and in other cases under

different titles that will more closely conform to the Milford School District's curriculum.

The Industrial Arts program in the Middle School will expand if fiscal resources will allow and an additional qualified instructor can be obtained.

Home Economics programs for 7th and 8th grades will continue.

The Career Laboratory program in the 5th and 6th grades should continue to effectively function since the two Career Aides employed to assist in this program are expected to be supported by outside funds. The future success of this activity will also depend to a great extent on the caliber and fitness of newly hired teachers. With the teacher turnover, it will be essential to recruit new teachers with a philosophy that is essentially in agreement in regard to career education with that of the school.

Business and Office Practice will continue and expand to a small degree. In the past, this activity was offered only as an elective. Plans are to conduct min-courses for those students who are scheduled for Physical Education everyday. A portion of the Phys-Ed class time will be allotted for these mini-courses.

Elementary programs for the most part will be

sustained. These activities have all been pretty well integrated into the regular curriculum.

Senior High programs should continue to function depending on the priorities established by the District. Since DOVEM high school activities are so closely tied to activities that would otherwise exist (such as the Occupational Mall), school officials see only a slight curtailment of some facets of these programs.

The activities of the Job Placement Coordinator, a position now supported through State funds, will continue unabated.

District wide activities will in some cases feel the pinch of fiscal restraint. Programs such as the Summer Opportunities Program will probably not continue due to the expense of sustaining its operation.

In summary, the Milford School District has indeed indicated a commitment to not only continue the successful elements of the DOVEM but to reinforce and expand certain activities. Those activities that will be cut back or eliminated will be those that require dollars that simply will not exist.

EPILOGUE

The external evaluation process conducted throughout the DOVEM's three years has shown conclusively that the Model has proved to be highly successful. The program has "reached" students who would not have been "reached" otherwise, and, in the words of one enthusiastic elementary school principal, "will hopefully continue to touch every one of the youngsters here."

EVALUATION PROCEDURE

The procedure for preparing this Evaluation Report and the two earlier evaluation reports incorporated three elements:

1) Interviews

2) Review of Data

3) Group Discussions

A standardized survey instrument was prepared by the consultant and approved by the Director of the Project. Four survey instruments were prepared, each addressing itself to specific areas of concern:

1) Teachers

2) Administrators

3) Advisory Committee Members

4) Community Leaders

A random sample of each of the populations were selected by the consultant for interview. The interviews were conducted in private, some recorded on tape, and analyzed by the consultant team.

A list of Advisory Committee members was provided by the DOVEM staff. Several interviews were conducted.

Interviews were conducted also with community leaders of Milford. The sample selected was again random but provided input from a wide cross section of the Milford business community.

APPENDIX D

INTERNAL EVALUATION

INTERNAL EVALUATION

Part I. Elementary Level - Grades 1 & 2

Purpose: At the elementary level, evaluation focused on the relationship of learning outcomes to project supported activities. More specifically, the evaluation has sought to answer two basic questions:

1). Is occupational awareness greater in project supported classrooms?

2). Have project supported activities provided a memorable and/or enjoyable experience in school?

These questions have been posed as means of assessing two project objectives:

1). To develop occupational awareness at the elementary level, and

2). To provide meaningful experiences in the world of work and technology.

Procedures - Occupational Awareness

1. Definition - The construct of occupational awareness was defined as knowledge of occupations; specifically, knowledge of the occupational terms, titles, tools and work environments. In terms of the cognitive domain, it appears that awareness is a lower level skill involving memory. In the affective domain, Bloom (1964) has defined awareness as knowledge together with attending behavior, the attitudinal component.

2. Test Development - The test of occupational awareness developed by the project staff is included with instructions in a separate appendix entitled Data Gathering Instrumentation. It was developed at the end of the project's second year and was based on those occupations teachers reported as having mentioned and studied in career education classrooms, Grades one through two. Monthly, class activity report forms were available and these reports were reviewed for occupational titles. A master list of 132 titles was compiled from these forms. Each teacher, career education and non-career education, received a copy of the master list and checked those titles mentioned in his classroom. Teachers also added titles not included on the master list.

Thirty occupational titles were selected to represent those workers in students' home, school and community environments with approximately two titles from each of the fifteen occupational career clusters. This selection procedures, based on school, home and community environments, was suggested by the district curriculum guide for the elementary schools which contains the recommendation that workers in these environments be included as a part of the "social living" curriculum for elementary students. The thirty titles chosen were compared to career education teachers' master lists; at each grade level at least three of the three or four career education teachers at that grade level had mentioned and studied each occupation on the test.

The project staff formulated questions for each of the thirty titles based on a term, tool or work environment. These questions required the student to respond by circling a "yes" or "no" answer. The terms were balanced for "yes" or "no" correct response to avoid response set bias.

3. Sample - All students in Grades one and two were pre and post-tested not including those students grouped in special education classes. For data analysis in the evaluation, approximately 50 percent of the students' scores from each classroom (Grades one and two) were randomly selected. The population of students in these grades had not been randomly assigned to classrooms at the start of the school year.

4. Design, Analysis And Limitations - For Grade one, data were analyzed in a three-group design for an analysis of covariance. The first group was formed from the classes of two teachers who had used an occupational curriculum for two years. The second group was formed from the classes of two teachers who were using an occupational curriculum for the first time. The third (control) group was formed from the classes of four randomly selected teachers who had not used project support.

The primary limitation of this evaluation was the possible bias presented by non-random assignment of students to classrooms. The presence of such a bias would account for a significant difference between treatment and control groups in this ex-post facto analysis;

consequently, covariance analysis with pretest scores was used to adjust for initial difference among groups.

Results

Table 1 contains the means and standard deviations for Grades one and two while Table 2 contains the results of the covariance analysis on occupational awareness scores. As indicated in the table, no significant mean differences were obtained for the curricular effect at either grade level.

Procedures - Estimating The Effects Of Project Supported Activities In Career Education Classroom

The population of students in Grades one and two, in project supported classrooms, was interviewed in groups of two or three students at a time. Four classes were interviewed at Grade one and five at Grade two.

Students were interviewed during the last two weeks in May at the close of the school year. Students were asked to recall what they had done in school during the year. They were then asked to tell what they had enjoyed and what they had not enjoyed in school during the year. Interviews were recorded for response classification purposes.

Limitations

No estimate has been made on the reliability (stability or reproducibility) of responses obtained in the interview procedure. It seems reasonable to assume that these responses are influenced by primacy and/or recency effects in memory as well as the extent

TABLE 1

MEANS AND STANDARD DEVIATIONS FOR GRADES I & II

GRADE I	Pretest MEAN	Pretest S.D.	Post Test MEAN	Post Test S.D	Adjusted Post-Test MEANS
I (2 yr. teachers) (N=20)	18.95	5.74	23.65	2.23	23.5
II (1 yr. teachers) (N=20)	17.60	5.24	22.25	2.95	22.5
III (Control) (N=20)	18.55	5.16	21.35	5.79	21.3
GRADE II					
I (Experimental) (N=40)	23.00	3.32	23.68	3.38	23.2
II (Control) (N=40)	21.53	4.54	22.98	3.45	23.4

TABLE 2

RESULTS OF COVARIANCE ANALYSIS

SOURCE	df	MS	F
GRADE I			
Among Groups	2	23.58	1.85($p > .05$)
Within Groups	56	12.75	
GRADE II			
Among Groups	1	0.49	0.08($p > .05$)
Within Groups	77	6.38	

to which the classroom teacher has used project supported activities.

Classification Of Responses

Project staff members classified students' responses as being project related or not related. A response was considered related if the mentioned activity was supported by project funds. Examples of this classification are certain field trips, "the workbench," "making the puppet show," and "the garden."

Results

The results of response classification are presented in Table 3 and reported as percentages. No significance tests were computed since the total population of project supported classes was interviewed.

It is apparent from the results that significantly more "non-related" responses were given than "related" responses to both questions. At the same time, results indicate that "related," enjoyed responses are significantly different from "related," not-enjoyed responses.

TABLE 3
CLASSIFICATION OF RESPONSES BY PERCENT
TO TWO INTERVIEW QUESTIONS

Grades I & II (N=207)	Activity Enjoyed		Activity Not Enjoyed	
	Project Related	Not Related	Project Related	Not Related
No. of Responses	64	177	2	206
Percent	14.4	85.6	0.09	99.01

PART II. MIDDLE SCHOOL - Grade 6

Purpose: Evaluation at the middle school level has sought to investigate the effects of an occupational curriculum on both the cognitive and affective domains. More specifically, the evaluation has sought to answer the following questions related to the project's goals:

1). Has an occupational education curriculum contributed to an increased knowledge and awareness of occupations?

2). Has an occupational education curriculum contributed to an increased level of vocational maturity, self-concept and favorable attitudes toward school?

Procedures - Occupational Knowledge And Awareness

1. Tests And Test Development - One test developed during last year's evaluation was used to assess occupational knowledge and awareness. This test consisted of fifty (50) items combined from the six forms of the Occupational Cognizance Test developed for the fourth grade level (ED-037-571). This test included occupational information and educational-level needs for various occupations.

Four additional tests were made by teachers and were meant to serve a criterion-referenced function. One teaching team created an occupations test and an objective, content test to assess learning in an Ecology unit. A second team made a science test and an objective, content test to measure learning in a media and communications unit.

2. Vocational Maturity, Self-Concept and Attitudes Toward

School - Vocational Maturity was assessed using Crites' Vocational Development Inventory (1966). This instrument seeks to assess personal involvement in selecting a vocation, independence in vocational decision-making, and orientation to the world of work as indicators of vocational development. A single composite Vocational Maturity score is obtained for each individual.

The tests of Self-Concept and Attitudes Towards Schools were revised from those developed by the Instructional Objectives Exchange for the intermediate level. Six (6) scales, based on a factor analysis of last year's testing, were used to assess attitudes toward teacher-pupil relationships, authority, self in peer relations, learning setting, school atmosphere, and anxiety. Each scale score was obtained by summing only those responses indicating positive attitudes as recommended by the I.O.X.

3. Sample - Two teams at the sixth grade level received project support while a third did not. All students in these teams were tested and the scores of approximately 45-50 percent of the students on each team were randomly selected for the analysis. Students were not randomly assigned to the different teams at the start of the school year.

4. Design And Analysis - The design of the evaluation was the simple three (3) group comparison: two experimental and one control. Differences among means were analyzed by a multiple analysis of variance.

Limitations

The primary limitation of this evaluation was the lack of randomly assigned groups. Such randomization would permit inferences concerning the effects of the curriculum on students; however, no such inferences are possible since in this design, history, maturation, effects of testing, etc., are plausible rival hypotheses in explaining differences.

Results

Table 4 contains the means, standard deviations and the results of the analysis of variance on all groups while Table 5 contains the results of the criterion-referenced tests constructed by teachers. As indicated in Table 4, the univariate F-ratios failed to obtain the usual levels of significance as did the overall F-ratio for the discrimination, multivariate hypothesis ($F=0.55$, $df=16,250$). Table 5 indicates that the differences on tests designed to serve a criterion-referenced function obtained the usual levels of significance.

TABLE 4

MEANS, STANDARD DEVIATIONS AND RESULTS OF ANALYSIS OF VARIANCE

TEST:	1-Teacher/ Pupil Relations	2-Authority	3-Self in Peer Relations	4-Learning Setting	5-School Atmo-sphere	6-Anxiety	7-Occupa-tional Awareness	8-Voca-tional Maturity
GROUP I								
(Exp, N=45) $\bar{x}$ =	5.73	6.53	3.53	5.20	4.58	3.71	32.96	28.27
s.d. =	2.18	2.83	1.18	2.81	1.37	1.58	9.17	6.40
GROUP II								
(Exp, N=45) $\bar{x}$ =	6.02	7.09	3.36	5.89	4.60	3.69	31.67	26.64
s.d. =	2.06	2.84	1.21	2.31	1.47	1.47	10.71	6.11
GROUP III								
(Control, N=45) $\bar{x}$ =	6.24	6.67	3.29	5.49	4.49	3.58	32.24	27.87
s.d. =	1.88	2.88	1.62	2.43	1.50	1.42	8.38	7.34

TEST	AMONG MEAN SQ.	WITHIN MEAN SQ.	F(2,132)
1	2.96	4.18	0.71
2	3.79	8.10	0.47
3	0.72	1.82	0.39
4	5.39	6.37	0.85
5	0.16	2.10	0.07
6	0.23	2.23	0.10
7	18.76	89.62	0.21
8	32.14	44.06	0.73

TABLE 5

MEANS, STANDARD DEVIATIONS AND RESULTS OF CORRELATED T-TEST ON CRITERION-REFERENCED TESTS

		PRETEST		POST - TEST		T
GROUP I (Media)	Content	$\bar{x}$ = 13.52	s.d. = 4.90	$\bar{x}$ = 15.13	s.d. = 6.61	2.5 (df = 115, p<.01)
	Science	$\bar{x}$ = 10.79	s.d. = 2.73	$\bar{x}$ = 14.24	s.d. = 3.97	3.4 (df = 127, p<.01)
GROUP II (Ecology)	Content	$\bar{x}$ = 14.04	s.d. = 4.28	$\bar{x}$ = 19.24	s.d. = 4.89	7.6 (df = 87, p<.01)
	Occupations	$\bar{x}$ = 3.8	s.d. = 2.11	$\bar{x}$ = 4.6	s.d. = 0.35	4.7 (df = 78, p<.01)

Discussion

The lack of significant results in grades one and two holds several implications for future development of an occupational curriculum. As noted in last year's report, a need still exists for specifying occupational learning objectives, proposed by teachers and taught by teachers. A curriculum of this sort would obviate the use of a 30-item awareness test that can assess, only superficially, those subject matter differences which might exist between project-supported and non-supported classrooms. In short, such a curriculum would facilitate a content-valid evaluation.

In the 6th grade, the significant results from teacher-made tests coupled with the lack of significant results from the standard measure reify the utility and importance of specifying objectives for learning and evaluation. These results support the notions of the preceding paragraph by demonstrating that teacher-made tests can show differences in learning and that detecting these differences may be due to the content validity of the teacher-made tests. In sum, we cannot expect standardized instrumentation to show differences in learning unless it can be demonstrated logically and empirically that the standardized test assesses what occurs in the classroom in terms of the content of instruction. Specifying instructional objectives can be a means to this end.

BIBLIOGRAPHY

Borow, H. "Vocational Development Research: Some Problems of Logical and Experimental Form." Personnel and Guidance Journal, 1961, 40, 21-25.

Bottoms, G. and O'Kelley, G. S. "Vocational Education as a Developmental Process." American Vocational Journal, 1971, 46 No. 3, 21-24.

Budke, W. E. "Review and Synthesis on Occupational Exploration and Information Series 31." Columbus, Ohio: The Center for Vocational and Technical Education, The Ohio State University, 1971.

Crites, J. O. Vocational Psychology. New York: McGraw-Hill Book Company, 1969.

Erickson, E. H. Childhood and Society. New York: W. W. Norton, 1950.

Field, F. L., Kehas, C. D. and Tiedeman, D. V. "The Self-Concept in Career Development: A Construct in Transition." Personnel and Guidance Journal, 1963, 41, 767-71.

Fischer, J. H. "Public Education Reconsidered." Today's Education, 1972, 61, 22-31.

Frielander, F. "Underlying Sources of Job Satisfaction." Journal of Applied Psychology, 1963, 47, 246-50.

Gagne, R. M. "Some New Views of Learning and Instruction." Phi Delta Kappan 51: 468-472. Also in Exploring Human Development, edited by H. W. Bernard and W. C. Huckins. Boston: Allyn and Bacon, Inc., 1972.

Galinsky, M. D. and Fast, J. "Vocational Choice as a Focus of the Identity Search." Journal of Counseling Psychology, 1966, 13, 89-92.

Geist, H. "Work Satisfaction and Scores on a Picture Interest Inventory." Journal of Applied Psychology, 1963, 47, 369-73.

Ginzberg, E. Career Guidance: Who Needs It, Who Provides It, Who Can Improve It. New York: McGraw-Hill Book Company, 1971.

Ginzberg, E., Ginsberg, S., Axelrod, S. and Herma, J. Occupational Choice. New York: Columbia University Press, 1951.

Glasser, W. Schools Without Failure. New York: Harper and Row, 1969.

Goodman, P. New Reformation: Notes of a Neolithic Conservative. New York: Random House, 1970.

Harvey, O. J., Hunt, D. E. and Schroder, H. M. Conceptual Systems and Personality Organization. New York: Wiley, 1961.

Herr, E. L. "Unifying an Entire System of Education Around a Career Development Theme." ERIC Document No. ED-045-856, VT-008-896, 1969.

Herr, E. L. Decision-Making and Vocational Development. Boston: Houghton Mifflin, 1970.

Herr, E. L. "Contributions of Career Development to Career Education." Journal of Industrial Teacher Education. Spring, 1972, 9, No. 3.

Holland, J. L. The Psychology of Vocational Choice. Waltham, Massachusetts: Blaisdell, 1966.

Hoyt, K., Evans, R., Mackin, E. and Mangum, G. Career Education - What It Is and How To Do It. Salt Lake City, Utah: Olympus Publishing Company, 1972.

Korman, A. K. "Toward an Hypothesis of Work Behavior." Journal of Applied Psychology, 1970, 54, 31-4.

Lamm, Z. "The Status of Knowledge in the Radical Concept of Education." In D. E. Purpel and M. Belanger (eds.) Curriculum and the Cultural Revolution. Berkeley, California: McCutchan Publishing, 1972, 124-142.

Leonard, G. B. Education and Ecstasy. New York: Dell Publishing, 1969.

Lodahe, T. M. and Kejner, M. "The Definition and Measurement of Job Involvement." Journal of Applied Psychology, 1965, 49, 24-33.

Office of Education. Career Education, ERIC Document No. ED-059-396, 1971.

O'Hara, R. P. "A Theoretical Foundation for the Use of Occupational Information in Guidance." Personnel and Guidance Journal, 1968, 46, 636-640.

Parnell, D. "The Career-Cluster Approach in Secondary Education." In K. Goldhammer and R. Taylor (eds.) Career Education: Perspective and Promise. Columbus, Ohio: Charles E. Merrill Publishing Company, 1972.

Piaget, J. The Moral Judgement of the Child. London: Routledge and Kagan Paul, 1932.

Piaget, J. and Inhelder, B. The Psychology of the Child. New York: Basic Books, 1969.

Ryan, T. Antoinette. "A Conceptual Model of Career Development." Educational Technology, June 1973, p. 28.

Schrag, P. "End of the Impossible Dream." Saturday Review, 1970, 53 (38), 68-70.

Stevens, N. "Job-Seeking Behavior: A Segment of Vocational Development." Journal of Vocational Behavior, 1973, 3, 209-219.

Super, D. E. The Psychology of Careers. New York: Harper and Row, 1957.

Super, D. E. and Others. Career Development: Self-Concept Theory. Princeton, New Jersey: College Entrance Examination Board, 1963.

Super, D. E. and Others. Floundering and Trial After High School. Career Pattern Study Monograph IV , Cooperative Research Project No. 1393. New York: Teachers College, Columbia University, 1967.

Super, D. E. "Vocational Development Theory: Persons, Positions and Processes." The Counseling Psychologist, 1969, 1, 2-9.

Super, D. E. and Bachrach, P. B. Scientific Careers and Vocational Development Theory. New York: Teachers College Bureau of Publications, 1957.

Super, D. E. and Crites, J. O. Appraising Vocational Fitness. New York, 1962.

Tiedeman, D. V. and O'Hara, R. P. Career Development: Choice and Adjustment. New York: College Entrance Examination Board, 1963.

Toffler, Alvin. Future Shock. New York: Random House, 1970.

Tuckman, B. W. An Age-Graded Model for Career Development Education. The Research Coordinating Unit for Vocational-Technical Education, Bureau of Occupational Research Development, New Jersey State Department of Education, Trenton, New Jersey. Monograph II.

Worthington, R. Career Guidance and Career Development. Associate Commissioner of Education, Wisconsin Guidance Conference, 1972.